

THE EFFECT OF CULTURAL BELIEFS AND CUSTOMS ON NUTRITIONAL ATTITUDES  
AND FOOD CHOICES OF ASIAN POPULATIONS LIVING WITH CHRONIC DISEASES  
IN THE ANCHORAGE METROPOLITAN AREA

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A  
PROJECT

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By

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### **Abstract**

A chronic disease is a non-infectious, gradually occurring illness that worsens and lasts over a lengthy period (World Health Organization [WHO], 2013). According to the WHO, the number of individuals with chronic disease is increasing worldwide. The rise in numbers is especially dramatic in Asian populations as they make the transition from traditional to Western diets. Studies have shown that chronic disease can be prevented or managed by rejecting the Western diet of processed, refined, high fat foods and adopting a healthier diet. However, little is known about the effect of culture and customs on attitudes towards nutrition. This study explored their influence on the nutritional status and food choices of Anchorage-area Asian adults living with chronic disease. A purposive sample of Asian adults with chronic disease was recruited, a series of focus group meetings were held over a month-long period, and participants were asked questions related to nutrition and culture. Themes were identified and analyzed using the PEN-3 theoretical model and quality of analysis was addressed by following the process proposed by Lincoln and Gruba. Findings indicate that participants in general recognized the benefits of improved nutrition in the management of their chronic disease but had insufficient knowledge or perceived lack of support to make the necessary changes.

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### **Introduction**

The World Health Organization [WHO] (2013) defines a chronic disease as a non-infectious illness that develops gradually, worsens with time, and endures over a protracted period. The Centers for Disease Control and Prevention [CDCP] (2015d) expands the definition by requiring that the condition is present for a minimum of one year before making a chronic disease diagnosis and includes the caveat that the healthcare needs of those with chronic disease are open-ended. The Centers for Medicare and Medicaid Services (2012) includes conditions such as diabetes, hypertension, heart disease, and hyperlipidemia in the chronic diseases category.

### **Background and Problem Statement**

#### **Prevalence**

Chronic disease is a challenging healthcare problem at the global, national, and local levels. Over the next 20 years, healthcare systems will be confronted with providing services to an ever-increasing number of individuals living with chronic illness (Salomon et al., 2012). The WHO (2011) reported that in 2005, approximately 60% of all deaths worldwide were attributable to chronic disease. Globally, chronic disease deaths were anticipated to increase by 17% between 2005 and 2015, barring significant intervention targeted at the underlying causes (WHO, 2011). Currently, half of all adults in the United States have one or more chronic diseases (Ward, Schiller, & Goodman, 2014). Moreover, the Alaska Department of Health and Social Services, Division of Public Health (2014) reported that approximately 70% of Alaskan adults were overweight/obese, 30% had hypertension, and almost 40% had elevated cholesterol. Lastly, a report by the American Diabetes Association [ADA] released in 2014 reported that 10.5% of Alaskans were diabetic, and almost 37% were pre-diabetic.

**Economic Burden**

The expense of extended healthcare for progressive illnesses compounds the individual and community burden of chronic disease. Globally, costs related to chronic disease care and lost productivity are expected to average over \$500 billion yearly by 2025 (Bloom et al., 2011). Nationally, providing healthcare for individuals with chronic disease accounts for 86% of all healthcare expenditures in the United States (CDCP, 2015a). The CDCP (2014) estimated the United States cost for diabetes care was \$245 billion in 2012; the Institute for Alternative Futures [IAF] (2011a) anticipates the cost will grow to over \$514 billion by 2025. In Alaska, spending for chronic disease accounted for about 34% of the \$7.5 billion public and private payers spent on healthcare in 2010, spending on diabetes (including indirect costs) was \$667 million by public and private payers in 2012, and medical spending by public and private payers in the State of Alaska is \$459 million every year on obesity alone (Dall et al., 2014; Foster & Goldsmith, 2011; Trogon, Finkselstein, Feagan, & Cohen, 2012).

**Diet and Chronic Disease**

While the increasing prevalence and spiraling cost of chronic disease threaten to overwhelm healthcare systems worldwide, research has shown that some chronic diseases are preventable, and the negative sequelae experienced by many individuals can be minimized. The WHO (2011) has identified four conditions that contribute to the majority of chronic disease diagnoses due to their impact on metabolism or physiology. These conditions include: overweight/obesity, hypertension, elevated blood glucose, and elevated blood lipids (WHO, 2011). A major contributor to the development of each of these four conditions is diet (Cecchini et al., 2010; CDCP, 2015b; James, 2009; Rao et al., 2014).

A diet rich in unprocessed, plant-based foods and low in refined, high fat, sweetened, and sodium laden foods, when accompanied by a caloric intake appropriate to body mass index (BMI), can be beneficial and help maintain health (CDCP, 2015b). However, poor dietary habits emphasizing the opposite nutritional choices such as found in the Western diet, can lead to disease (CDCP, 2015b; Katz & Meller, 2014). Poor dietary habits can determine the health of individuals by promoting the presence of one or more of the four conditions and providing the factors and environment necessary to cause chronic disease. Poor eating habits can also act to aggravate existing disease, allowing for disease progression. As a result of the global adoption of Western eating patterns, diet-related chronic diseases have become more prevalent in populations worldwide (WHO, 2011).

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Making healthy food choices can reduce the likelihood of developing any of the four described disease conditions and, therefore, result in positive health outcomes. The converse is also true; consuming a Western diet can increase the likelihood of developing one or more of the four conditions and can result in greater risk of poor health outcomes. Iqbal et al.'s 2008 INTERHEART case-control study surveyed over 15,000 people in 52 countries. The INTERHEART researchers found an association between a diet emphasizing high vegetable consumption and protection against the occurrence of acute myocardial infarction (AMI). AMI is frequently associated with cardiovascular disease, a form of chronic disease closely linked to the four previously identified chronic conditions (Iqbal et al., 2008). Iqbal et al. (2008) found a positive association between the presence of AMI and consumption of the Western diet, supporting the link between the Western diet and increased risk of cardiovascular disease. Furthermore, Akbaraly et al.'s 2013 cohort study of 5,350 adults determined that the typical Western diet was strongly associated with increased risk of disease, unhealthy aging, and death.

Poor dietary habits contribute to overweight/obesity and can activate Diabetes Mellitus Type 2 (DM2) in susceptible individuals through the effect of overweight/obesity on blood glucose and insulin levels. The prevalence of DM2 worldwide is 6.4% and is anticipated to rise significantly by 2030 (Shaw, Sicree, & Zimmet, 2010). A similar pattern of increase in DM2 is occurring in the United States. The United States prevalence of diabetes of all types is almost 10% and is expected to reach over 20% by 2050 (CDCP, 2014). Approximately 40% of U.S. adults over age 20 are considered 'pre-diabetic' and by 2030, data supports that over 50% will be obese (Boyle, Thompson, Gregg, Barker, & Williamson, 2010; CDCP, 2014).

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#### **Asians and Chronic Disease**

Such statistics are not only applicable to Caucasians but are an increasing concern for many minority groups, including Asians. The number of Asians in the United States with Type II diabetes has risen markedly over the past 30 years (CDCP, 2013). Asian Americans now have a higher prevalence of diabetes and elevated fasting blood glucose than African-Americans, Hispanics, and non-Hispanic white Americans (Hsu, Lau, Matsumoto, Moghazy, & Keenan, 2014). The number of Asian Americans with diabetes is expected to increase by 103% by 2025 (IAF, 2011b). Between the years 1992 and 2011, prevalence of overweight/obesity in Asian Americans doubled for some Asian subgroups, including Chinese, Japanese, and Asian Indians, and tripled for others, including Filipinos (Singh & Lin, 2013).

The cost of care for U.S. Asians with DM2 expected to increase by 111% by 2025 (IAF, 2011b). Due to the percentage of Asian community members, the Municipality of Anchorage will be significantly affected by the economic and healthcare burden related to caring for Asians with chronic disease. The U.S. Census Bureau (2015) reports as of 2013, just over 8% of the Anchorage Municipality population self-identified as Asian, the eighth highest percentage in

U.S. metropolitan areas. Based on the anticipated rise in the number of Asians with DM2 or overweight/obesity, Anchorage will bear a proportionally larger healthcare and economic burden than most other U.S. metropolitan areas.

**Significance to Nursing**

An ethnic group's culture and customs can be reflected in how individuals respond to their nutritional needs. Food choices, eating habits, and level of concern about diet can be culturally driven. Individuals' culture and customs can also influence the interaction of nutrition and the development and progression of illness. The culturally derived food choices and customary eating habits of a particular ethnicity can influence which patterns of chronic disease are commonly seen in that ethnic group.

In the past 50 years, Asians in the United States have moved away from their traditional eating habits while overweight/obesity and diabetes have increased substantially (King et al., 2012; Singh & Lin, 2013). In place of the traditional plant-based diet, U.S. Asians have adopted a diet that incorporates a higher fat and protein content with less vegetable and fiber intake (Misra, Kwon, & Yoo, 2010). This shift in dietary habits and increase in overweight/obesity has placed individuals in this population group at high risk of developing chronic disease.

Healthcare providers can benefit from an understanding and appreciation of cultural factors that influence patients' food choices and eating habits. Knowledgeable providers can guide their patients to make positive dietary changes to retard or reverse the adverse outcomes associated with having a chronic disease (De Meester, Zibadi, & Watson, 2010). The need for culture-specific understanding is especially true for providers working with chronic disease patients experiencing the shift from a traditional to a Westernized diet. These patients would benefit from education on the benefits of a return to a traditional plant-based diet, advice on

avoidance of the negative components of the Western diet, and an explanation of the association between diet and disease patterns seen in Asian populations. Providers can instruct their Asian patients that favorable change in eating habits, behaviors, and patterns can inhibit the progression or reverse the effects of chronic diseases (Halpin, Morales-Suárez-Varela, & Martin-Moreno, 2010). Informed providers can research and supply culture-appropriate support and patient-specific education. Given this information, Asian patients can make positive changes in their eating habits that will help prevent the progression of chronic disease and thus improve overall health. Informed providers can confidently match their guidance to the needs of Asian patients in Anchorage.

**Purpose of the Study**

The purpose of this study was twofold. Firstly, the researcher explored how culture influenced the nutritional status and food choices of Anchorage area Asians. Secondly, the researcher identified the knowledge level and knowledge needs that affect Anchorage-area Asians' ability to make healthy nutritional choices.

**Research Question**

How do cultural beliefs and customs affect nutritional attitudes and food choices of Asian populations living with chronic diseases in the Anchorage metropolitan area?

**Theoretical Framework**

Airhihenbuwa's (1995) PEN-3 cultural model provided the framework for research during this project. The model focuses on promoting health and preventing disease with targeted education. The model utilizes a three-dimensional construct that explores a cultural group's (a) cultural identity, (b) relationships and expectations, and (c) cultural empowerment. Each of these three aspects contains three components (Sharma, Branscum, & Atri, 2014). The acronym

PEN-3 is created from the first common letter of each component in each aspect: 'P' for person, positive and perceptions; 'E' for extended family, existential and enablers; and 'N' for neighborhood, negative and nurturers. The dimensions that make up the PEN-3 model are used to plan, implement, and evaluate research in a way that is centered on the culture of the ethnic groups studied (Sharma et al., 2014; Perez & Luquis, 2014).

The aspect of cultural identity includes the person and anyone the person considers as part of his or her extended family, neighborhood, or community. The model proposes that it is important that the healthcare provider considers all of these elements when attempting to influence the health of the person. Additionally, the model asserts that the provider should recognize any roles the person may play or identify with as part of their culture (Sharma et al., 2014; Perez & Luquis, 2014). This recommendation to recognize roles is especially relevant for minority populations, who often identify themselves as a family-based unit and include family in every major decision.

The aspect of relationships and expectations includes perceptions, enablers, and nurturers. Sharma et al. (2014) stated that perceptions refer to what helps (or hinders) change based on the cultural beliefs and values of the person and their family. Enablers are the pre-existing patterns or structures in the individual or community that impact behavioral change. Nurturers are the individuals in the community, peer group, or family that positively influence changes in behavior (Sharma et al., 2014).

The aspect of cultural empowerment consists of the components positive, existential, and negative. Sharma et al. (2014) explain that positive refers to the favorable influences or characteristics that support those in the family or community to adopt a healthier lifestyle. Existential refers to the exclusive behaviors that a certain culture believes in or regularly



performs that influence their health. Negative indicates the individual or cultural practices that are unhealthy and damaging to a person's health (Sharma et al., 2014). Iwelunmor et al. (2013) recommended the researcher identify of each component of cultural empowerment for a particular cultural group. The researcher can then formulate a strategy to encourage beliefs that are helpful to health, to acknowledge those that are health-neutral, and to work towards correcting those that are detrimental to health.

Healthcare providers can utilize cultural patterns identified by the application of the PEN-3 model to positively influence minority health. By applying the PEN-3 model, providers can empower the patients and families in ethnic minority groups to alter or reverse the upward trend of chronic disease. Using the model as the theoretical framework for this research project allowed the researcher to recognize, and be sensitive to, cultural differences, be better equipped to identify and understand health challenges for Asians, and acknowledge culturally-influenced patterns of health for the study population.

The model has been used in various studies that have examined a variety of cultural groups including Chinese-Americans and Chinese immigrants, Hispanic immigrants and adolescents, Native Hawaiians, Afghanis, Iranians, Hmong, Native Americans, and Southeast Asian immigrant populations (Acre, 2014; Ka'opua, 2008; Moua, 2006; Owiti, Greenhalgh, Sweeney, Foster, & Bhui, 2015; Saulsberry et al., 2013; Scarinci, Bandura, Hidalgo, & Cherrington, 2012; Shahandeh, Basseri, & Sharifzadeh, 2014; Yick, & Ooman-Early, 2009). Iwelunmor et al. (2013) made the recommendation that studies utilizing the PEN-3 model use qualitative methods at the outset in recognition of the distinct individuality of each culture. Therefore, the model was a suitable choice for this exploratory qualitative study.

### **Review of Literature**

Overall, there has been little research on the cultural influences of how and why individuals make the food choices they make. It is well recognized that improved nutrition can address many of the disparities related to chronic diseases in all populations (Esselstyn, Gendy, Doyle, Golubic, & Roizen, 2014). More research is needed to determine what cultural values and traditions prevent Asian individuals from maintaining a healthy lifestyle and preventing and treating chronic diseases.

The topics discussed in this literature review are arranged from general to specific. The general project concerns include the relationship between nutrition and the development and progression of chronic disease, the role of diet in preventing and treating chronic disease, and the interaction of diet and culture. The more specific review of population-focused literature includes modern dietary changes in Asian populations, changes in the patterns of disease and proposed causes in Asian populations, and the importance of diet in Asian populations.

### **Relationship between Diet and Chronic Disease**

Research shows that diet plays a role in the development and progression of chronic disease (Cecchini et al., 2010). Poor eating habits and insufficient physical activity are critical factors for the increase in the number of overweight and obese Americans (CDCP, 2015a; James, 2009; Rao et al., 2014). Consuming a nutritious diet, along with participating in regular exercise, can reduce weight and decrease health disparities associated with chronic disease (U.S. Department of Agriculture [USDA] and U.S. Department of Health and Human Services [USDHHS], 2010). Poor eating habits and consistent intake of food with little to no nutritional value not only leads to obesity but can also result in chronic disease. According to the CDCP

(2015a), poor eating habits, along with a lack of physical activity, are the two primary factors that cause chronic disease.

Many studies have recommended a whole food, high fiber, plant-based diet (Morton et al., 2014; Gustafson, 2014). These same studies also urge those individuals living with chronic illness to follow a diet that is low in fat, cholesterol, and refined sugar. The Morton et al. (2014) Complete Health Improvement Program (CHIP) was a short-term, Canadian-based research study and intervention program that focused on making lifestyle and dietary modifications to improve health and reverse chronic disease risk factors. The CHIP researchers found that within the first 30 days of the study, participants who consumed plant-based diets had significant improvements in BMI, blood pressure, and lab values (Morton et al., 2014).

CHIP and similar studies form the basis for the USDA and USDHHS's *Dietary Guidelines for Americans* (2010), which encourages individuals to manage weight with diet and exercise. The USDA and USDHHS's guidelines recommend that diets be nutrient dense with fruits, vegetables, whole grains, and fat-free or low-fat dairy. The guidelines also recommend increased seafood intake and decreased intake of saturated fats, trans fats, cholesterol, refined grains, and added sugars and sodium (USDA and USDHHS, 2010). The *Dietary Guidelines for Americans* is updated and published every five years by the USDA and USDHHS. Preliminary recommendations from the 2015 *Dietary Guidelines for Americans* indicate the focus will continue to be on encouraging Americans to eat a diet that promotes healthy weight and lifestyle (USDHHS, Office of Disease Prevention and Health Promotion, 2015). Evidence from CHIP, INTERHEART, and other studies also forms the basis for the nutrition and weight status goals from Healthy People 2020, a national program of health promotion whose goals include reduction of chronic disease through improved nutrition (USDHHS, 2014).

Research has shown that food content can impact health in both positive and negative ways. Akbaraly et al. (2013) monitored 5,350 English adults. The results of this research indicated that consuming a Western diet was highly associated with increased risk of chronic disease, unhealthy aging, and death. Furthermore, Avendano et al. (2009) found that older Americans had a greater incidence of obesity, heart disease, hypertension, diabetes, cancer, and lung disease than older adults in Europe, regardless of economic status. The authors suggested that obesity, which is strongly correlated with a Western diet, may be a major contributor to these health discrepancies.

Yusuf et al. (2004) considered risk factors for acute myocardial infarction. The study found that cardiovascular risk could be decreased 30% if individuals would make lifestyle changes. The recommended changes included regular consumption of fruits and vegetables and prevention strategies such as smoking cessation, lowering blood lipid levels, and participating in regular moderate activity. These studies suggest that people of all ethnic backgrounds will be more apt to decrease their incidence of chronic disease and prolong their lives by consuming nutritious foods.

Boffetta et al. (2010) and Choi & Friso (2010) found (a) a reduction in cardiovascular disease risk related to chromosomal variations, (b) chromatin modifications related to obesity and hyperinsulinemia, and (c) a small but statistically significant reduction in cancer risk through use of nutrients. Guh et al. (2009) noted that overweight individuals are at higher risk to develop, DM2, asthma, cancer, hypertension, stroke, coronary artery disease, gallbladder disease, and osteoarthritis. Danaei et al. (2009) identified that obesity, chronic disease, and death resulted from dietary patterns that were too high in salt and trans fatty acid intake and too low in omega-3 fatty acid and fruit and vegetable consumption. The authors also found that a slow, but

perceptible reversing of the effects of poor dietary habits occurred once a healthier diet was implemented.

### **Importance of Nutrition in Chronic Disease**

A diet containing foods with large amounts of omega-3 fatty acids, polyphenols, and antioxidants helps to decrease inflammation and support weight loss (Wang et al., 2014). Mishra et al. (2013) conducted a U.S. based four-month long randomized control trial and found that a low-fat and plant-based, vegan type diet decreased weight, plasma lipid levels, and improved glycemic control for diabetics. The authors implemented group change, used community support to encourage participation, and made the foods as mentioned above available to study participants for consumption. Furthermore, Esselstyn et al. (2014) reported that 198 participants with cardiovascular disease who consumed a plant-based diet and avoided all animal products and oils lost weight, significantly improved their health, and showed improvement or stability of their heart disease. Wang et al.'s (2014) meta-analysis of 16 research studies investigated the cause and effect relationship between fruit and vegetable consumption and cardiovascular disease and cancer. The authors concluded that five servings of fruits and vegetables daily help to promote health, decrease mortality, and improve cardiovascular disease.

### **Culture**

There are a limited number of current studies that focus on the interaction of cultural food practices and chronic disease. Researchers in this area suggest that more studies are needed to determine if culturally driven food choices affect obesity and chronic disease or if community, socioeconomic status, or access to food is responsible for the increasing incidence of obesity and chronic disease (James, 2009; Larson, Story, & Nelson, 2009). As research is conflicting on the inter-relationship between specific nutrients and their relationship to chronic disease, James

(2009) recommended researchers study eating habits and culture-related dietary patterns to formulate national goals and initiatives.

Populations that have traditionally consumed plant-based diets have migrated towards the Western diet over the past 30 to 40 years. This migration has resulted in a rise in the incidence of obesity, diabetes, and atherosclerosis (Grant, 2012). Daivadanam et al. (2014) conducted a qualitative study in rural India that explored participant beliefs about fresh food, the feasibility of making dietary changes, the processes of household decision-making, and intervention strategies at the household and community level. A common barrier to improved nutrition identified in this study was the factors that influenced food choices. The authors demonstrated that nutritional decisions within a household were based heavily on the cost, accessibility of food, and on family priorities. Data suggested that decisional balance was the strongest indicator that impacted behavioral change. Findings from this study highlighted that households were more likely to adopt a dietary or lifestyle change when the seriousness of a family member's chronic disease outweighed the inconvenience of lifestyle modifications.

Cultural influence on dietary habits and the presence of chronic disease is further described in studies that investigated Australian Aboriginals and Native Americans. Liaw et al. (2011) found that the best system for chronic disease management included interventions that involved the community, were well communicated to participants, were flexible to adapt to the people's needs, and were built on current knowledge of what participants considered to be acceptable and doable. Garwick, Jennings, and Theisen (2002) noted that New Mexico Native American families wanted family-centered care that included effective communication and culturally appropriate services from providers who understood their culture-specific needs. The

authors also indicated that providers should not assume, should listen to the patient, and ask questions as appropriate.

### **Asian Population**

The increasing prevalence of chronic disease in Asian populations and its relationship to nutrition is a topic of interest to many healthcare providers. Providers have recognized that Asian populations have traditionally followed a plant-based diet, which is considerably lower in fat and protein than the Western diet. However, over the past 50 years, nations with a predominately Asian population have seen a rapid transition from their traditional diet to a more Western-style diet (Gunasekera & Newth, 2014; Reardon et al., 2014). According to Harvard School of Public Health (2014), this shift has occurred as a result of globalization, economic development, and urbanization. Accompanying this dietary shift has been a concomitant increase in standards of living and access to higher quality and lower-cost sources of food. The decrease in complex carbohydrate intake, accompanied by an increase in meat, saturated fat, and sugar intake has caused a sharp rise in the cases of overweight/obesity and diabetes in Asian populations worldwide (Popkin, Adair, & Ng, 2012).

Current research highlights that an increased prevalence of diet-related chronic disease is associated with the adoption of a Western diet by Asian populations. Many studies have shown that Asians, worldwide and in the United States, are at high risk for the development and worsening of chronic disease due to poor diet and inadequate nutrition (Chan et al., 2009; Harvard School of Public Health, 2014; Hu, 2011). In 1980, it was estimated that 1% of the Chinese population had DM2. By 2008, this estimate had risen to 10% (Hu, 2011). Furthermore, in 1980, diet-related DM2 was cited as the eighth leading cause of death for Asian Americans; diabetes had risen to the fifth place among this group by 2012 (Chow, Foster,

Gonzalez, & McIver, 2012). Over a similar time span, obesity rates in Asian nations tripled for men and doubled for women while, in the United States, obesity rates tripled for both Asian males and females (Harvard School of Public Health, 2015; Hu, 2011).

Diets have changed considerably for Asians emigrating from foreign nations. Asian immigrants of previous generations traditionally consumed a plant-based diet and arrived in the United States with healthier dietary habits and lower obesity rates than U.S. residents (Singh & Miller, 2004; van den Berg et al., 2011). The process of acculturation occurred over years of U.S. residence, and the resultant adoption of Western eating habits and lifestyle resulted in a gradually increasing risk of developing chronic disease (Guendelman, Cheryan & Monin, 2011; Singh & Miller, 2004; van den Berg et al., 2011).

Today, Asian immigrants coming to the United States are familiar with the Western diet and already living with the increased risk of chronic disease that is associated with consumption of calorie-dense, highly processed foods. Asian immigrants come to the United States with established habits or lifestyles that predispose them to chronic disease. Research shows that Asian populations worldwide are experiencing the surge in the incidence of chronic diseases that accompanies a preference for a Western diet (Bendich & Deckelbaum, 2005; Cha, Kong, Moon, & Lee, 2009; Oh, Stefani, & Kim, 2014; Oxford Business Group, 2011; Yang et al., 2013). The statistical trends can be interpreted to suggest that many new Asian immigrants already have chronic disease in the beginning stages upon arrival in the United States. Acculturation for these new immigrants may mean the progression from subclinical disease to clinically identifiable symptoms in a relatively short period.

**Traditional versus Western diet.** There are significant differences between the traditional plant-based Asian diet and the Western diet. The traditional Asian diet is heavily



weighted with carbohydrates (55–70% of daily calories) and fiber (averaging greater than 30 g/per day) and has limited fat (15% of daily calories) and animal protein (20% of daily calories) (Drewnowski, & Popkin, 1997; Hsu et al., 2014). Conversely, the typical Western diet has fewer carbohydrates, less fiber, and considerably more fat (35% of daily calories) (Hsu et al., 2014). Although the Western diet has a similar protein component to the traditional Asian diet, it contains far more animal-sourced protein (Hsu et al., 2014).

The traditional Asian diet has shifted towards the Western diet over the last 40 to 50 years. Intake of carbohydrates and fiber has decreased, and consumption of fruit (at the expense of vegetable intake) has increased. Accompanying this is a much higher consumption of fat and more reliance on animal-sourced protein (Du, Lu, Zhai, & Popkin, 2002; Hsu et al., 2014). Studies show the move towards higher intake of fat and animal sources of protein is being seen across all Asian populations consistently. Low-income per capita nations like China, Cambodia, and Vietnam are now just as likely as high-income per capita countries like Japan and Korea to consume a Western diet (Drewnowski, & Popkin, 1997; Du et al., 2002; Li, Zhang, Jiang & Wu, 2012).

**Patterns of disease with the change in diet- Asian nations.** In the past 50 years, there have been distinct changes in disease patterns in Asian populations concurrent with the changing Asian diet. Such changes are seen in Asian populations overseas and in the United States. Asian nations have all seen an increase in the prevalence of heart disease, cerebrovascular disease, diabetes, and adult and childhood obesity (Bendich & Deckelbaum, 2005; Cha, Kong, Moon, & Lee, 2009; Oh, Stefani, & Kim, 2014; Oxford Business Group, 2011; Yang et al., 2013). The changes in disease trends are reflected in the increased morbidity and mortality statistics for chronic diseases. In 1950, Japan's death rate from ischemic heart disease was 10 per 100,000.

By 2000, it was almost 60 per 100,000. Furthermore, the mortality rate for cerebral infarction increased from four per 100,000 to 65 per 100,000 over the same period (Bendich & Deckelbaum, 2005). Since 1988, the prospective Japan Collaborative Cohort (JACC) Study, with 60,000 enrolled participants, has found an increasing prevalence of cardio- and cerebrovascular disease, diabetes, and obesity (Maruyama et al., 2013).

In China, diabetes and obesity are rapidly growing problems in urban and rural areas. Cardio- and cerebrovascular diseases are now the leading causes of mortality in China (Du et al., 2002; Yang et al., 2013). Similar trends in rates of preventable chronic diseases, such as overweight/obesity and diabetes, have also been on the increase in Korea and Thailand (Bendich & Deckelbaum, 2005; Cha, Kong, Moon, & Lee, 2009; Oh, Stefani, & Kim, 2014; Oxford Business Group, 2011). Currently, the chief cause of mortality in Thailand is diet- and nutrition-related chronic disease (specifically, cardio- and cerebrovascular disease), which has replaced infectious causes (Kosulwat, 2002; Rao et al., 2010). Research shows there has been a significant shift in disease trends over the past 50 years, with diet- and lifestyle-related diseases replacing the previous infectious and epidemic causes for morbidity and mortality in Asian nations.

**Patterns of disease with the change in diet- United States.** Asians residing in the United States have similarly changing patterns of disease with the change in diet. Hsu et al. (2014) compared the effects of a traditional Asian diet and a Western diet in Asian and Caucasian populations. The authors found that both groups had improved insulin sensitivity when a traditional Asian diet was followed. Additionally, the authors discovered Asian participants, but not Caucasians, had impaired insulin sensitivity when eating a Western diet (Hsu et al., 2014). These findings suggested that different ethnic groups consuming the same

diet will have different outcomes and that Asians experience more detrimental effects from a Western diet than do Caucasians (Hsu et al., 2014; Tanaka & Seino, 2013). Hsu et al. (2014) also demonstrated that the traditional Asian diet lowered total, LDL, and HDL cholesterol (the HDL: LDL ratio remained stable) as well as serum inflammatory markers. Improved LDL cholesterol and serum inflammatory marker values are associated with decreased risk of heart disease and stroke (González-Chávez et al., 2011; Hirabara et al., 2012; Woo & Robinson, 2015). Lastly, Hsu et al. (2014) found that a Western diet not only increased the above parameters but also increased weight and body fat, particularly in the trunk.

Other studies have looked at the Western diet and its implications for health. Howarth, Murphy, Wilkens, Hankin, and Kolonel's (2006) prospective Multiethnic Cohort Study is an ongoing study investigating the relationship between caloric intake and overweight/obesity risk in U.S. populations. Howarth et al. (2006) collected and evaluated data from over 190,000 people from five ethnic groups (African American, Caucasian, Latino, Native Hawaiian, and Japanese Americans). The authors suggested conclusions about the relationship between an energy-dense diet (measured as kilojoules/gram) and the risk of being overweight or obese. Howarth et al. (2006) determined that Japanese Americans of both sexes had a significantly higher risk of being overweight from an energy-dense diet than any of the other four ethnicities.

**Patterns of disease and proposed causes.** Specific populations demonstrate particular patterns of diseases. Focused studies have shown that particular diseases tend to cluster more or less frequently in some populations than in others (CDCP, 2010; Cruickshank & Beevers, 2013; Moronia, Bianchia, & Lleo, 2012; Prideaux, Kamm, De Cruz, Chan, & Ng, 2012). Focused studies have also found that, in certain populations, particular diseases occur at ages that vary from the overall population average (Hu, 2011; Ramachandran, Ma, & Snehalatha, 2010; Tang et

**Commented [BB3]:** So if the ratio remained stable, how was the diet beneficial?

al., 2012; Yoon et al., 2006). Studies have produced evidence that, for some populations, particular diseases can be triggered by greater or lesser exposure to a treatment (CDCP, 2010). The literature contains examples of studies that have linked a rationale for a disease pattern with the Asian population.

Numerous studies have shown that Asians and Caucasians differ in respect to the development and progression of chronic disease (Hu, 2011; Hsu et al., 2014; Ramachandran, Ma, & Snehalatha, 2010; Tang et al., 2012; Yoon et al., 2006). Research has shown that Asians have higher overall body fat and greater abdominal obesity than Caucasians with a similar BMI and have a tendency to develop insulin resistance at a lower BMI than do Caucasians (Hsu et al., 2014; Tang et al., 2012; Yoon et al., 2006). Insulin resistance, along with obesity, is associated with DM2 and other chronic diseases affecting all of the body's organs and systems (González-Chávez, Simental-Mendía, & Elizondo-Argueta, 2011; Hirabara, et al., 2012; Rector, Thyfault, Wei, & Ibdah, 2008). These same chronic diseases present at a significantly lower BMI, and in a much younger age group, in Asian populations than what is seen in Caucasian populations (Ramachandran, Ma, & Snehalatha, 2010; Tang et al., 2012; Yoon et al., 2006).

Asians experience a faster progression of the adverse effects of diabetes and more complications from diabetes and cardiovascular disease. This has been demonstrated in a number of studies comparing the characteristics of chronic disease in Asian populations with other ethnic and racial groups (Dreyer, Hull, Mathur, Chesser, & Yaqoob, 2013; Misra & Khurana, 2011; Ramachandran et al., 2010; Yadav, Tiwari, & Dhanaraj, 2008; Yoon et al., 2006). A 2011 study by van den Berg et al. found that Asians had an increased prevalence of diabetic nephropathy and progression to end-stage renal disease than Caucasians. The researchers found that rice, a staple of the Asian diet, has the effect of acidifying the urine; this is

balanced by vegetable intake in the traditional diet for a net neutral effect. The Western diet increases meat ingestion while decreasing vegetable intake. Increased intake of meat with a concurrent decrease in vegetable consumption shifts the urine composition back towards acidic. The result is an increased ammonia formation, which ultimately causes nephrotoxicity and renal disease (van den Berg et al., 2011). The increase in the dietary acid load related to increased meat ingestion and decreased vegetable intake, and the subsequent acidification of the urine, is also strongly associated with the development of diabetes. Such findings were corroborated by Fagherazzi et al.'s (2014) European prospective study that included almost 70,000 women.

**Importance of diet for Asians.** A number of studies have looked at possible reasons for the propensity towards development of the chronic diseases of overweight/obesity and diabetes in Asians. Tang et al. (2012) compared Asians to other U.S. populations at high risk for developing diabetes. He found that Asians might be at higher risk of developing diabetes due to unrecognized obesity. Research across racial groups, including Caucasians, African-Americans, Hispanics, and Asians, shows that for Caucasians, a BMI of 30 is correlated with body fat percentage of approximately 25% (Rush, Freitas, & Plank, 2009). Numerous studies have found that Asians have a higher body fat percentage than Caucasians of similar BMI, sex, and age (Deurenberg-Yap, Niti, Foo, Ng, & Loke, 2009; Tang et al., 2012; Wang et al., 2010; Yoon et al., 2006; Yutaka, Yoon, Chong, & Carroll, 2014). Day & Bailey's 2011 study proposes that Asians should be considered overweight at a BMI of 22 to 23. However, a number of studies have found that due to a higher fat percentage in Asians for a given BMI, a better measure of obesity in Asians may be waist circumference (>90 cm for males and >80 cm for females) or waist-to-hip ratio (>0.9 for males and >0.85 for females) (Goh, Dhaliwa, Welborn, Lee, & Della, 2014; Low, Chin, Ma, Heng, & Deurenberg-Yap, 2009; Yoon et al., 2006). Studies

**Commented [BB4]:** And what would be the waist circumference that would indicate obesity? Same with waist-hip ratio?

indicate that Asians have an increased risk of developing chronic diseases associated with being overweight or obese than other ethnicities at a similar BMI (Goh et al., 2014; Low et al., 2009; Yoon et al., 2006).

**Public health importance of diet for Asians.** Prevention of chronic diseases like overweight/obesity and diabetes are major considerations for Asians. Limitation of the sequelae of chronic disease in those Asian individuals with existing overweight/obesity and diabetes are also of great importance. Based on the patterns of dietary change in Asian populations, the United States will soon begin to experience a large increase in healthcare expenditures for Asians with chronic disease (Ramachandran et al., 2010). These expenses will be compounded by the associated increase in diet-related chronic disease occurring in a younger age group than is typical for other ethnicities. These individuals may require healthcare for their chronic disease conditions for significantly longer than the United States is currently accustomed to in other ethnic groups (Ramachandran et al., 2010).

Management of overweight/obesity and diabetes in Asian population groups is of great importance to healthcare resources and expenditures in the United States. Optimal nutrition can prevent chronic disease and slow the progression of existing disease. For example, individuals with diabetes can halt, or at least slow, cardiovascular, hepatic, renal, and other organ system sequelae that result from an unchecked disease process by modifying their diet (Andrews et al., 2011; Ikizler, T., 2008; Kaput & Rodriguez, 2004; Matos, Porayko, Francisco-Ziller, & DiCecco, 2002; Snively & Gutierrez, 2004). Diet can be used as a method of primary prevention by modifying risk factors for the development of chronic disease. A healthy and well-balanced diet can also act as a valid means of secondary prevention by treating pre-clinical disease and

preventing disease progression. Diet can address tertiary prevention needs by reducing the risk of deterioration of an individual's condition when a chronic disease is already present.

### **Methods**

#### **Focus Group Design**

Focus groups are particularly helpful during an exploratory qualitative design project when there is little known about the topic of interest (Curtis & Redmond, 2007; Krueger, 2002; Redmond & Curtis, 2009; Sagoe, 2012). This project investigated an area of inquiry where attitudes of a population group have not yet been studied. According to Curtis and Redmond, focus groups are "appropriate if the purpose is to explore the views, feelings, and experiences of a homogenous group" (2007, p.27). Therefore, for this study, a focus group design was utilized to investigate the culturally related dietary attitudes and customs of the Asian population.

Asian cultures typically value group participation, interaction, and cohesion. In the Asian culture, the unit is the family and group/community rather than the individual (Kipke, Elmen, & Tsoukalas, 2009; Lam, Irwin, Chow, & Chan, 2001). The Asian population has strong oral traditions and individuals from this ethnic group rely heavily on word of mouth to share information and experiences (Davies, 2002; Kipke et al., 2009). Asians value face-to-face communication. This cultural group regards personal interaction as a way to evaluate the speaker's intent when questions are being asked of them (Kipke et al., 2009; Lam et al., 2001). Asian individuals are expected to place importance on reciprocal obligations. Asians view participation in social exchange and interaction as a commitment they undertake when they join a group (Kipke et al., 2009). In the published literature, marketing studies have found that the

group/community orientation of Asian populations is particularly suited to focus group participation (Davies, 2002; Kipke et al., 2009).

**Focus group meetings.** The researcher anticipated that two to three focus groups, each with four to six participants, would be required to reach saturation for the study population (Grove, Burns, & Gray, 2013; Krueger, 2002, Krueger, 2006; Krueger & Casey, 2014; Magilvy & Thomas, 2009). Three focus group meetings were needed. Each meeting consisted of four to seven homogeneous participants ( $n=16$ ). The focus groups were held in community facility meeting rooms to ensure a comfortable, quiet, and private setting. Each of the focus group sessions lasted for approximately one hour. All of the participants received a \$20 Wal-Mart gift card purchased by the researcher as a token thank you gift at the end of the focus group.

**Focus group questions.** Focus group questions were adapted from James's 2004 study on the eating habits of African-Americans (see Appendix A). James's research examined the cultural factors influencing nutritional choices made by a minority population. The questions from James' study are written in a culturally neutral format, and the language and content are applicable to other minority groups. The researcher received permission to adapt James' questions for use in this project (see Appendix B).

Open-ended questions were used to maximize individual participation and capture variations in response and opinion (Magilvy & Thomas, 2009) (see Appendix C). Additionally, all of the questions were written at a Flesch-Kincaid sixth grade reading level to limit confusion and increase understanding (U.S. National Library of Medicine, 2013). The focus group questions demonstrated face, construct, and content validity. Firstly, a known expert in nutrition with qualitative research expertise developed the questions. Secondly, the questions were previously tested and verified in a study of the nutrition habits of the African-American cultural



group. Lastly, the questions addressed many aspects of the experience of interest, the effect of culture on nutrition habits (Creswell & Miller, 2000; Grove, Burns, & Gray, 2013).

### **Participants**

**Inclusion criteria.** The target population for this project included Asian individuals over 18 years old living with a chronic disease for at least six months. Chronic disease diagnoses for this project included: diabetes, obesity, hypertension, and hyperlipidemia. All participants were residents of the Anchorage metropolitan area for a minimum of six months, were able to speak and understand English, and self-identified themselves as a member of the Asian population.

**Participant recruitment.** Purposive sampling was used to gather study participants. Recruitment flyers (see Appendix D) and project literature were placed in Anchorage-based primary care clinics that regularly provided care for Asian patients, culture-specific social groups and churches with a predominately Asian congregation, and Asian markets and restaurants. The researcher initially contacted clinics and churches by phone to arrange an in-person meeting to discuss the possibility of participating in this project. The researcher visited each market and restaurant location directly to request permission to hang signage and post flyers to solicit study participants. Participants were recruited once Institutional Review Board approval was secured (see Appendix E). Participant recruitment occurred over a period of one month.

### **Data Collection, Analysis, and Management**

**Data collection.** The researcher acted as moderator and note-taker during all focus group sessions. A script was created for moderating each focus group (see Appendix F), which included: introductory comments, a discussion about informed consent, the study questions with prompts, and concluding comments. The script ensured that the same format was followed for

each focus group and that each question was asked in the same order. Permission to adapt a script for moderating focus groups was obtained from JoAnn Kauffman, President of Kauffman & Associates, Inc. (see Appendix G). The researcher, acting as the group moderator, provided prompts to encourage participants to consider different aspects of each question and to provide clarification. As recommended by Redmond & Curtis (2009), the moderator also paraphrased and summarized main points that were brought up in response to each question. Paraphrasing and summarizing helped to ensure the accuracy of understanding and are part of the process of ensuring trustworthiness (Lincoln & Guba, 1986). With prior consent from participants, each focus group was digitally recorded. Each subject had a numbered identification card before them to allow the moderator to speak to the subject specifically, to track the speaker for later matching with the digital recording, and to associate non-verbal cues with specific individuals.

Participants were identified by a unique number to help maintain anonymity.

**Data analysis.** All data were collected and analyzed by the researcher. Audio recordings were transcribed into an electronic document using tape-based analysis (Krueger, 2006; Krueger & Casey, 2014; Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). This method, in which the full recording is abridged and the new document becomes the unit of analysis, allows the researcher to “focus on the research question and only transcribe the portions that assist in better understanding of the phenomenon of interest” (Onwuegbuzie et al., 2009, p.4). Krueger and Casey (2014) stated that recognition of the pertinent elements of the recording could only occur by an individual who understood the study goals; therefore only the researcher could perform the transcription. As recommended by Onwuegbuzie (2009), the researcher repeatedly listened to each recorded discussion, focusing on the research questions. With the exception of comments extraneous to the discussion, for example “pass me the water,” the researcher created a verbatim

transcript. The resultant tape-based transcript was “a condensed version of the focus group with the irrelevant conversation removed” (Krueger & Casey, 2014, p.131).

Once the abridged transcription was complete, the researcher followed the process described by Krueger (2002) for analyzing the focus group transcripts. The transcripts were line numbered, each statement was identified with the contributing participant using a participant ID number key, and each question was assigned a color. Transcripts were read multiple times looking for patterns or themes in the participants’ responses to questions. The recurrent ideas were highlighted and the transcripts cut up into the individual highlighted quotes. Quotes were sorted by patterns of words, phrases, or ideas, placed in like groups, and put on a sheet of paper. Quotes with applicability to multiple groups were duplicated and added to each group. The groups were each allocated a major theme name. Further consideration of associated ideas within each major theme generated subthemes. Four major themes, each with three to four subthemes, were found.

**Data management.** All original recordings were digitally retained on a secure zip drive, with access limited only to the researcher. A backup copy of each recording was made and stored until transcription was complete and then the backup recording was deleted. To maintain privacy, any individual identifiers that were present on the audio recording were deleted from the digital transcripts and subjects were tracked only by the unique participant ID number. Only the researcher had the participant ID number key and knowledge of the subjects if any first names were present on the audio recording. The original recordings, transcripts, participant ID number key, and paper documents will be securely maintained for three years in a locked cabinet at the University of Alaska, Anchorage School of Nursing and then destroyed.

### Ethical Considerations

Prior to the initiation of all data collection, UAA Institutional Review Board approval was acquired (see Appendix E). Participation was completely voluntary. There were no perceived emotional or physical risks to any participants. Written informed consent was obtained from all participants after they had been given a verbal and written description of the project (see Appendix H). Participants were provided with a copy of their written consent form. As part of the process of ensuring trustworthiness of findings, information gathered from prior focus groups was shared with later groups to assess for agreement; this information was non-specific in nature and could not be associated with any participant. At the conclusion of the focus group meeting, participants each received a \$20 Wal-Mart thank-you of gift card. Access to study results will be provided at the participant's request.

### Findings

#### Participants

Sixteen Asian adults participated in one of three focus groups (see Table 1). One participant was male and the rest were female. All study participants were age 35 or older and all were born in Asian nations. 12 of the 16 participants were Korean; the other four were Filipino. The majority of participants were long-term residents of Anchorage, with two-thirds living in the city for 10 or more years. English was a second language for all of the participants. During the focus group discussions, many of the responses were given as full sentences expressed with good vocabulary and fluidity while others were in the form of sentence fragments using non-standard word order. While verbalization for a few participants was hesitant, the researcher could clearly understand the meaning communicated. All focus group participants added to the discussion, however, several from each group were willing to speak in more detail

**Commented [BB5]:** You said in our discussion chapter, that you provided participants of subsequent groups with information from prior groups to assess their agreement. It would be important for you to put that information here. Did you provide the participants with the ability to review your conclusions in order to assure that you had accurate information from the focus group conclusions? If not, that could be considered a limitation of the study.

than others. Three participants had little to say and mainly echoed the sentiments of the others in their focus groups by stating their agreement or nodding. Three members of focus group one, three members of focus group two, and two members of focus group three were the most verbal and therefore responsible for most of the project data.

Table 1

*Focus Group Demographics (n = 16)*

Variable	Category	Percentage
Age (years)	18-34	0 (00.0%)
	35-55	5 (31.3%)
	≥ 56	11 (68.7%)
Gender	Male	1 (0.63%)
	Female	15 (93.7%)
Birthplace	United States	0 (00.0%)
	Asia	16 (100%)
Anchorage residence (years)	.5-3	0 (00.0%)
	4-9	4 (25.0%)
	10-20	2 (12.5%)
	>20	10 (62.5%)

**Commented [BB6]:** Please review APA for table. Generally, there should not be any vertical lines in the tables.

The participant comments were identified using a letter and number key to maintain participant confidentiality. The first focus group was identified by the code P1; each of the five participants from the first group was then designated as P1-1 to P1-5. The designation P2-1 to P2-7 identified the seven participants from the second group, while P3-1 to P3-4 identified the four participants from the third group.

**Themes**

A total of four themes emerged once the focus group transcripts were analyzed (see Table 2). These included themes of: (a) the perception of impediments to healthy eating, titled *breaking the barrier*; (b) the personal implications of healthy eating, titled *obstacle course*; (c)

the interaction of ethnicity, environment, age, gender, and healthy eating, titled *displacement*; and (d) the educational component of healthy eating, titled *checking in/checking out*. No major theme predominated; therefore, the four themes are presented sequentially to correspond with the order of the questions asked.

Table 2

Themes and Subthemes

Themes	Subthemes
Breaking the barrier	Trust Competition Taste Market forces
Obstacle course	Stress Accommodation Personal commitment Culture-specific
Displacement	Cultural exposure Generational differences Substitution
Checking in/checking out	Information sources Opportunities Customization

In addition to thematic content, the participants supplied statements that expressed a solid understanding of the differences between healthy and unhealthy eating. Many of these statements came in response to the first question and the prompt of “What makes a food healthy or unhealthy.” Descriptions of healthy and unhealthy eating patterns included statements such as that expressed by P1-4, “Unhealthy is what makes you more sick” and by P2-2, “You don’t like it and you have to eat it, healthy.” Participants also showed their knowledge of healthy and unhealthy foods. P1-1 stated, “Fish,” P2-6 said, “Red meat,” and P2-4 asserted, “Low sodium”

as examples. Categories of healthy and unhealthy foods were seen in the assertions by P3-3, “They end up having all this obesity because of the high fat, high carbohydrates, processed food” and by P1-2, “Korean food, there’s lots of vegetables so it’s healthy.” Comments such as P3-2’s statement, “Serving food all you can eat” and P3-3’s, “The way they are prepared” showed participants were aware of how foods can be transformed from healthy to unhealthy through cooking or serving methods. Participants were concerned about the perceived adulteration of otherwise healthy foods, as evidenced by the assertions by P3-3, “It’s what’s in the food is bad [*sic*]” and by P3-1, “Additives and the GMO’s.”

**Breaking the barrier.** The first theme, breaking the barrier, emerged as the researcher contemplated participants’ comments that touched upon the impediments to healthy eating. The theme highlights the idea that there are hurdles that must be overcome to consume a nutritious diet. This theme evolved as 12 of the 16 participants vocalized concerns and distractions they experienced when attempting to eat a healthy diet. Subthemes for this theme included *trust*, *competition*, *taste*, and *market forces*.

**Trust.** *Trust* as a subtheme captured the way in which the participants expressed worry over the safety of foods available for retail purchase. P1-4 demonstrated safety concerns as he or she declared that, “Additives, that’s mainly killing us.” Similarly, P3-3 asserted, “It’s what’s in the food is bad [*sic*]”. Distrust of producers, suppliers and marketing practices was highlighted as P1-3 stated, “They say this is organic, but it’s not organic. All the companies, they are all greedy. They don’t care about our health. Big profit, that’s all they care.” Likewise, P1-5 stated:

**Commented [BB7]:** Is there a reason that you did not put subtheme headings in the text? I think that would help the reader to more clearly define the differences in the subthemes,

When you go to the store, you say oh yeah, this is a healthy food but when you look, they usually put it in tiny, tiny print, so actually what it is saying there, it's not really healthy. There is bad stuff in there.

Trust also included the participants' suspicion about the marketing of foods and food producers and suppliers. Lack of trust regarding marketing practices was also seen as participants referred to the impact of advertising on making rational choices. P3-3 stated, "The junk foods here are very attractive" and "that's why children tend to buy more of that than the healthier food." Lastly, trust described the confusion over conflicting information about healthy eating. Participants expressed trust concerns over the competing recommendations about what is healthy and unhealthy eating. P1-1 commented, "Lots of people say coffee is good; some say coffee is not good. I don't know which ones I'm supposed to go to."

**Competition.** The subtheme of competition was drawn from the overlap between competing responsibilities, time commitments, and the attraction of convenience. Competition arose from accommodating multiple demands on available time. P2-2 expressed, "Nowadays, both the parents have to work. They cannot prepare healthy foods." P3-3 stated, "A lot of people work two jobs, to keep up with, struggling, the cost of living. So they end up just doing the easy way out." P1-3 said, "I'm too busy to do anything so now I don't cook anymore." Competition also resulted from the participant's experience of the conflict between eating well and the convenience of easy eating. P1-2 asserted, "You can go out and buy McDonald's, they do have, now, you can select the salad mix, you know, that's good." Referring to how time-challenged individuals were lured by convenience, P3-3 stated, "Because it's on my way. And what is the most easy accessibility, they go [*sic*]." Convenience as an element of competition had some overlap with marketing as an element of trust, as seen in the comment by P3-3, "They



are always close to each other, always. Wherever you go, there's McDonald's; everywhere there's always Taco Bell. Everywhere you go, the chain, the mentality of the company, they know business [*sic*].”

A source of competition was the requirement of a time commitment to eat a healthy diet. P1-5 said, “Eating healthy is time-consuming.” P2-7 stated, “We need to shop for those fresh foods, prepare it, clean up. It's a long process.” The comment from P3-3 exemplified the overlap, by describing the internal competition to accommodate the multiple demands on time and resources:

You're not only competing for (with) yourself, because of time constraints that you already have but also the pressure that you have, you want to feed your family right away, you don't have time, so the easiest way to put food in their mouth is, let me just go to the restaurant and buy something.

An additional source of competition was the need for a time investment to anticipate, plan, and mobilize resources. P3-1 described the process by explaining, “We go out of the state... We buy a lot (of vegetables) and then we freeze them. We blanch them and then we vacuum pack. So then we have them in the wintertime.” Further describing the time required, P3-3 asserted, “You know, you anticipate that winter is coming, so what are you gonna do? So planning it [*sic*].”

**Taste.** The subtheme taste described the aspects of food and eating that participants believed made eating healthy unpalatable or a chore. P1-5 commented about cooking healthy in the home compared to the pleasures of eating outside of the home and stated, “When you go out, it tastes good. Because you don't cook food at home like that. But you eat more, because you

finish the whole plate, because it tastes so good [*sic*].” P2-2 asserted, “Plain makes it less enjoyable, it tastes different, you know?”

In addition, taste was the element of comfort found in the familiar and habitual.

Referring to the subtheme of taste and the accustomed, P1-2 stated, “He didn’t grow up with it (food item) and to him, it doesn’t taste good,” P1-4 explained about a family member, “She only prepares what she knows,” and P1-3 commented, “You have to be just a little bit adventurous to find something (food item) different.” Taste also acted as a deterrent to following a nutritious diet. This was captured in P1-3’s explanation of why individuals who desired to make healthy changes found it difficult to do so, “So it’s like people have it in their minds (to change their cooking habits) but foods, it’s not so easy to change the taste. I think that’s why they continue to make it the same way.”

**Market forces.** The subtheme of market forces emerged in relation to food purchased in the Anchorage metropolitan area. Market forces depicted the market driven cost of foods. P2-4 declared, “Fresh fruit and vegetables are expensive here.” P2-7 said, “There’s a lot of microwaveable food and instant food in the cheaper price than fresh fruit and vegetables. Sometimes, it kind of keeps us from eating healthy [*sic*].” P3-3 commented, “Most of the money that goes is for your food [*sic*].” Market forces also incorporated market driven food options. P1-3 declared, “Here, it doesn’t have any selection [*sic*].” and P1-5 asserted, “When you are in other states, there is freshness all around.” The cost aspect of local market forces was not just monetary. Cost could also be considered part of subtheme of competition when regarded as the investment of time and effort. Focus group three’s members discussed local resources for vegetables and the benefits (and drawbacks) to planning ahead. P3-1 said, “You just have to be resourceful here” to which P3-3 replied, “storage and preservation.”

**Obstacle course.** The second theme, obstacle course, unfolded as the researcher considered what the implications of healthy eating meant for the participants. Obstacle course represented the challenges the participants had to plan for and overcome. Obstacle course incorporated how eating habits were affected by the determinants of a participant's state of health (e.g. chronic disease, aging). Thirteen of the 16 group members made reference to the ramifications of electing to, or opting not to, eat a healthier diet. Subthemes for this theme included *stress*, *accommodation*, *personal commitment*, and *culture-specific concerns*.

**Stress.** The first subtheme, stress, was the term cited by the participants to describe the experience of living with dietary choices; the substitute word pressure was also used recurrently. Eight of the 16 focus group participants spoke of stress or pressure, some returning to the idea repeatedly. P1-2 verbalized, "I see some of the people, they are stressful because they have to choose which one they want to eat [*sic*]" and that it is, "stressful when you get around other people, and you can't eat." P1-5 said, "It's a lot of stress, to cut down on a favorite food." Stress was also seen as beneficial when it encouraged a healthier choice. P3-1 stated, "So if you have peer pressure...like ok, we are going to bring food, but today we are going to bring healthy ones."

**Accommodation.** The subtheme accommodation emerged when participants addressed their alterations in eating habits that accompanied changes due to growing older or developing a chronic disease. P2-1 disclosed, "I have less taste as I get older." P1-1 said, "I crave things I never ate before as I get older." P2-5 said, "I like to eat a lot of rice. But because of my diabetes, my doctor recommended only a very small amount of rice, only a couple of times a week." P3-2 commented, "I think there are some changes when it comes to diet or the food that you eat when you already get sick or when something happens to you."

***Personal commitment.*** The subtheme personal commitment summarized the intrinsic motivation that allowed an individual to make needed changes and to continue them indefinitely. Speaking about individuals with health conditions, P1-3 declared, “They know they have poor health, so they need to eat better but when it comes to change, it’s not easy to change. So they are like, the heck with it anyway.” Likewise, P3-3 said, “They’re gonna say, we have only one life to live, so why not be happy, make your mouth happy and eat whatever. So their mind is set.” Participants described that personal commitment was achievable when an individual acknowledged the opportunity for improvement in their health status and a time frame that would allow it to be appreciated. P1-2 asserted, “She’s not gonna change her diet, because of the fact that she lived long enough [*sic*]” and P2-1 said, “Not elders, because they’re living so long, they’re not really concerned about it. If they like to eat, they eat. If they don’t like to eat, they don’t eat.”

Participants linked a personal commitment to following a healthier diet with denial. Focus group one discussed the changes made for a healthier lifestyle after a chronic disease diagnosis. P1-2 described the limitations experienced by P1-3, necessitated by changed eating habits. P1-2 stated, “She’s the healthiest person I know but she doesn’t go out with us anymore.” In response, P1-3 revealed, “I try to cut off pretty much everything from outside from coming into my life.” P1-3 also linked the idea of personal commitment to the need for vigilance to maintain healthful changes by stating, “...I can only selectively eat certain things. So now I’m reading all the labels.”

***Culture-specific concerns.*** The subtheme culture-specific concerns included Asian-specific food preferences and the disease patterns seen as a consequence of those preferences. Rice and salt were the two foods that were most identified with Asian culture and the ones that

participants considered as being most difficult to remove from the diet. Over half of the participants specifically brought up salt and many also spoke of the more generic terms seasoning or spice; half spoke about rice. The statements by P1-5, “And rice, that’s the hardest to cut,” and “We like salt,” and the assertions by P3-1, “And then our deserts are made of rice again,” and “We are used to eating rice for breakfast, fried rice leftover from the night before,” with support by P3-2’s comment, “Rice for lunch,” and by P3-4’s pronouncement “Dinner rice,” showed the importance of these items in the Asian diet.

Disease patterns were recognized as specific to the interaction of cultural eating habits and genetics. P1-2 asserted, “Most Koreans do have high blood pressure because of high content salt [*sic*].” P2-2 stated, “Asian people get stomach cancer because Asian people usually like to eat salty and spicy, and hot. But Americans like meat and get colon cancer” and P3-2 declared, “That’s why we’re diabetic.”

**Displacement.** The third theme, displacement, represented the researchers recognition of the effects of ethnic, environmental, and generational differences on participants’ eating habits. The theme emerged from participant’s statements regarding the impact their cultural heritage, and its interaction with the dominant American culture, had on their eating habits. Twelve of the 16 participants made comments related to this theme. Subthemes for this theme included *cultural exposure*, *generational differences*, and *substitution*.

**Cultural exposure.** The subtheme cultural exposure is seen by the participants’ description of the impact of length of stay on eating habits. P2-7’s assertion, “Older Asian people (that come to America), they don’t change, they continue like they used to eat” and P2-2’s statement, “Americans usually eat meat- hamburger, bacon, steak, chicken- usually every mealtime, but Asian people usually eat vegetables” can be contrasted with P3-3’s statement:

We tend to go away from the traditional way of eating together. We don't group together as a family to eat and enjoy each other's company, exchanging what happened during the day. Now whoever gets hungry, can eat whatever they find there.

The subtheme generational differences was represented by the comment by P2-5, "Older people, we eat white rice and brown rice, but the younger people, even though they are Asian, when they grow up here, they eat bread and sandwiches, potatoes, hamburgers." P3-1 stated, "They're more adventurous you know, trying other foods, new foods. Because of their exposure to friends." P2-2 declared, "Their body is Asian, but their mind is American." Lastly, P3-3 commented:

I was born and raised in the Philippines, and my boys were born and raised here. Even though I introduced Filipino food inside the home, they are more outside than at home. So the introduction right away changes. Like you introduce them when they're young but when they're always outside, they see their friends, or they see their classmates and they eat this, and then they feel pressure.

***Generational differences.*** Participants felt that each generation approached eating differently. Examples of these differences included the statement by P1-2, "She's got my genes, so she's not big, but she worries about her health. Myself, personally, I don't choose what food to eat, I just eat it if it's there" and P3-1's comment, "They will see what food can do for them and they can research what it is." P2-2 expanded on this:

Old people, young people, there's a difference. Older people, daily three times they eat. Older people, every time breakfast, lunch, dinner, they eat it usually. Now, I have to eat lots of meals because I'm diabetic. But I'm talking about people when they're young, skip meals. No time to eat sometimes. In the morning when they wake up, they have to

drink coffee. Coffee for breakfast. No lunch time, only dinner. Lunch times, they don't get lunch, too busy. Sometimes, only one time to eat. They are too busy to eat. Once a day, now they have to eat because they're hungry, no breakfast, no lunch. They eat a lot at dinner because they skipped meals. Later, there is diabetic trouble, cholesterol problems, high blood pressure [*sic*].

**Substitution.** The subtheme substitution represented the participant's description of how the traditional Asian diet is being supplanted by the Western diet. This subtheme also incorporated the recognition of the shortcomings of consuming a Western diet. Substitution was demonstrated by the statement by P2-2, "In Asia, Asian people are now eating westernized food" and the comment by P1-5, "What is healthy? If you look at it, it is not like it used to be. In all countries, they are putting in the GMO thing [*sic*]." The traditional diet is being replaced by a Western diet, but concurrent with this is the recognition that the Western diet has known health drawbacks. Therefore, concern about healthy eating has become more universal and was reflected in the assertion about eating habits in Asia by P3-1, "They are trying to eat moderately. And not eating and splurging on those foods that makes you unhealthy." Similar comments regarding the choice to eat a healthier diet were heard from P1-5, "As the [Asian] economy is getting better, people are more interested [in eating healthy]" and from P1-4, "I hear from people [in Asia] that they are concerned more about eating healthier."

**Checking in/checking out.** The final theme, checking in/checking out, evolved when data revealed the participants desire and need for sound nutrition education. The theme also embodied the mis/communication of nutrition education between participants and the healthcare provider. The checking in portion of the theme represented how individuals search out nutrition education and includes recognition of those most open to, or in need of, education. The checking

out segment referred to education that was not useful or ignored because of lack of applicability, utility, or understanding. Fifteen of the 16 group participants made comments related to this theme. Subthemes for this theme included *information sources*, *opportunity*, and *customization*.

**Information sources.** Checking in included the information sources utilized by the focus group participants. Examples of common sources were seen in the statements given by P3-3, “Role modeling, we see it from our parents. Reading, media. Or when you go to the grocery [sic], you read it, and you see what it is for. And the schools.” P1-1 added the source, “Doctor,” P1-4 added, “I watch TV,” and P2-3 said, “Traditional knowledge, handed down.” Over two-thirds of the participants indicated that their nutrition information and education came from the Internet, family members, or friends.

**Opportunity.** About two-thirds of the group participants spoke about the opportunity subtheme. Opportunity referred to the recognition of those who would potentially benefit from teaching. The participants described those individuals they believed to be most in need of, or most likely to be receptive to, nutrition education. Opportunity meant acknowledging those who could collaborate in the education process. Opportunity also included participant statements reflective of occasion for education.

Opportunity was demonstrated by P3-3 who said, “A lack of understanding, a lack of awareness. Then you end up making a poor decision for your health.” Opportunity was also seen in comments such as those by P3-1:

We can adjust to that, because as we read about the good things you derive from all those like whole wheat, and those green leafy, unless sometimes we also, the advertisement that we see on the TV and in the news, we can adapt [sic].

**Commented [BB8]:** Was there a reason that you made the comment about the numbers of people who made comments? Is the number of people significant in qualitative research, especially in focus groups where everyone hears the conversation?

**Commented [A9]:** Some idea of the number of participants commenting (or not) on a particular theme allowed me to make generalizations like ‘the great majority of participants’.

**Commented [BB10]:** Same question?

**Commented [BB11]:** Same question?



Recognition of the opportunity for education was shown by the statement by P2-4, “Mothers with children, they would be concerned about children’s health, so they are more willing to learn about nutrition.” Opportunities also meant recognition of those who could be allies in the education process. This was demonstrated by statements such as that from P1-5, “If you do it as a group, as a family group, then you can come with a contribution about what how we’re going to be helping” and the comment by P3-1, “It depends on who in the family is buying the food and who is preparing the food.” P3-2 suggested, “Bring the family” to which P3-4 replied, “That’s peer pressure!” Need for sound education was shown by the statement by P2-5, “Doctor said to eat fish, but the problem is when my wife cooks it, she adds a lot of salt to fish. But I need to eat it however she cooks it.”

**Customization.** Checking out occurred when nutrition education lacked customization. About one-third of participants made comments related to this subtheme. P2-3 commented, “Doctor suggested to drink lots of milk but whenever I drink it, I get diarrhea.” P1-2 stated, “So I don’t understand, I can’t drink 8 cups of water,” P3-3 asserted, “Most Filipino’s, they tend not to read, they tend to learn more with demo,” and P2-6 said, “Spoken and written in my language. I would put it on the refrigerator to remind me when I cook.” Overall, data revealed that participants would appreciate if healthcare information accommodated their learning style, cultural concerns, and specific health issues.

## **Discussion**

### **Trustworthiness**

Trustworthiness, found in the precepts of credibility, transferability, dependability, and confirmability, is the qualitative equivalent of generalizability, internal validity, reliability, and objectivity in quantitative research. Trustworthiness of the findings of this research study was

achieved by following the classic model set first set forth by Lincoln and Guba (1986) and recommended by Thomas and Magilvy (2011) and Elo et al. (2014). Credibility was accomplished by having a detailed plan for collecting and managing data, following the same plan for all data from each focus group, and validating and summarizing participant statements during each focus group. Summary information from prior groups was also presented to later groups for their agreement or denial as recommended by Thomas and Magilvy (2011). Transferability was accomplished by reporting the demographic characteristics of the participants, the method in which they were sampled, and the data in detail (Elo et al., 2014). Dependability was accomplished by carefully delineating the criteria used to select focus group participants so that future studies using the same criteria should find a repetition of the results (Elo et al., 2014). Thomas and Magilvy (2011) state that confirmability “occurs when credibility, transferability, and dependability have been established” (p. 154). Additionally, confirmability was accomplished by maintaining field notes, allowing the participants to lead the discussion points, and by seeking clarification for any areas of potential confusion (Thomas & Magilvy, 2011).

### **PEN-3 Model**

The researcher formulated conclusions and recommendations based on the data generated by the focus group participants. These findings are discussed in relation to the PEN-3 model, which guides the creation of culture-appropriate health interventions through a three-dimensional construct. The model’s three dimensions consist of a health education diagnosis, an education diagnosis, and the cultural appropriateness of behavior.

A health education diagnosis comes from the recognition of the person, extended family, or neighborhood that is in need of health intervention (Airhihenbuwa, 1995). An education

diagnosis comes from an understanding of the culture's perception of health and healthy behaviors, the habits that enable it to achieve these healthy behaviors, and the nurturers who support practices that result in health improvement (Airhihenbuwa, 1995). The cultural empowerment components positive, existential, and negative health habits are at the basis of the cultural appropriateness of the behavior of the cultural group (Airhihenbuwa, 1995).

Airhihenbuwa (1995) describes the health education diagnosis as originating in the recognition of the person, extended family, or neighborhood that is in need of health intervention. The themes obstacle course, displacement, and checking in/checking out contributed to this recognition. The content of these themes highlighted the importance of addressing nutrition concerns specific to the individuals and their family and household. Content from these themes also focused attention on the opportunity for positive change at the community level. The recommended interventions were based on the identified opportunities.

According to the PEN-3 model, an education diagnosis is derived from three factors. Firstly, making the diagnosis requires an appreciation of the culture's perception of health and healthy behaviors. Secondly, the diagnosis evolves from consideration of the habits that enable it to achieve these behaviors. Lastly, the diagnosis arises from an understanding of the nurturers who support practices that result in health improvement. Content from all four themes was used to support recommended interventions in this category.

Frankish, Lovato, and Poureslami (2008) state that to determine the cultural appropriateness of health behaviors, "cultural beliefs and practices that influence health are examined whereby solutions to health problems that are beneficial are encouraged, those that are harmless are acknowledged, before finally tackling practices that are harmful and have negative health consequences" (p.3). Focus group participants provided evidence indicating they were

knowledgeable about healthy eating habits, benign habits, and injurious habits. Evidence was furnished in statements supporting the themes breaking the barrier, obstacle course, and displacement. Specifics from these themes gave rise to culturally appropriate recommendations for reinforcing, or intervening in, dietary practices.

### Findings and Existing Literature

Chronic disease can be managed by rejecting the Western diet of processed, refined, high fat foods and adopting a healthier diet. Research by Cecchini et al. (2010), Gustafson (2014), Morton et al. (2014), Rao et al. (2014), and others supports the benefits of a prudent diet for individuals with obesity, DM2, hyperlipidemia, and hypertension. The discussions in the focus groups demonstrated that the great majority of the study participants had at least some knowledge of the interaction between healthy and unhealthy diets and the status of their chronic disease. In order to attain the benefits of healthy eating, participants must apply knowledge and overcome challenges to following a healthy diet. Participant statements and their responses to questions, presented in the four themes, outlined the challenges they experience and their knowledge needs.

Most of the participants were concerned about the implications of electing (or not) to consume a nutritious diet and what following a healthy diet would mean for their mental and physical well-being. These implications formed the obstacle course subthemes of stress and personal commitment. The participants named stress as a ramification of choosing between healthy and unhealthy eating habits. Stress is a complaint commonly heard by minority health diabetes educators, as found by Hawthorne et al. (2009) in their systematic review of culturally appropriate health education and the qualitative study by McKenzie and Harris (2013). In addition, participants indicated that having a personal commitment to improved health was vital

**Commented [BB12]:** Is this what you meant?

**Commented [BB13]:** This paragraph is confusing to me. There is no title for it and it is not part of your discussion of the theoretical framework. You did a very nice job of relating the framework to your findings. However, you now need to move into a deeper discussion of the findings related to the existing literature. Were your findings similar to the research in the lit review? I found this section confusing because much of your discussion of findings seemed to be couched in the recommendations. The recommendations are an offshoot of the discussion, and your discussion should attempt to explain what you found in your results.

to making and maintaining dietary changes. This is congruent with the findings of the qualitative studies by McKenzie and Harris (2013) and Booth et al. (2013).

While the study participants showed an understanding of the need for healthy eating habits to manage their chronic disease, most indicated that following a plan for improved nutrition was often difficult. Studies strongly support the link between poor eating habits and consistent intake of food with little to no nutritional value and the onset and worsening of chronic disease (Almeida et al., 2010; Andrews et al., 2011; Boffetta et al., 2010; Cecchini et al., 2010; Day & Bailey, 2011; De Meester et al., 2010; Dreyer et al., 2013; Essestyn et al., 2014; González-Chávez et al., 2011; Guh et al., 2009; Gustafson, 2014; Hsu et al., 2014; Maruyama et al., 2013; Mishra et al., 2013; Morton et al., 2014; Popkin et al., 2012; Rao et al., 2014; Wang et al., 2014). Participants comprehended the link but cited numerous reasons why making a reasoned and consistent change was so cumbersome.

These reasons formed the breaking the barrier subthemes of taste, competition for time and resources, trust in information sources and food supplies, and the Anchorage-specific challenges of cost, selection and freshness. The majority of participants were conversant with the many impediments to eating a healthy diet that were present in their lives and were challenged to find ways to overcome them, a finding seen in the 2013 study by McKenzie and Harris. Cost as a factor inhibiting change was common to the systematic review by Rao, Afshin, Singh, G. & Mozaffarian (2013). The concepts of taste, competition, and trust were seen in the 2013 research study by Booth et al.

Many of the group participants understood the dynamic interrelationship between their cultural heritage, environment, age, and gender with the dominant American culture. Many of the participants had experienced the interaction of each of these factors, independently and in

combination, with eating habits. The interrelationship formed the subthemes of cultural exposure and substitution from the displacement theme. Participant experience of ‘fitting in’ with the dominant culture is an echo of the findings from the two experiment study by Guendelman et al. (2011), which found that Asian Americans felt constrained to appear part of the dominant culture and therefore chose more typically Western (and less nutritious) foods.

All of the participants reported they were engaged in their health, actively sought out information on diet and nutrition to become more educated, and expressed interest in acquiring more education from reliable sources. Their reports are contained in the information sources, opportunity, and customization subthemes of the checking in/checking out theme. Liaw et al. (2011) and Garwick et al. (2002), in their studies of minority cultures, found that teaching and interventions that were built on foundation of knowledge about what participants considered to be culturally appropriate and achievable, that were flexible to adapt to a person’s needs, and that involved the family and community were more likely to be accepted. These findings were consistent with the focus group participants statements about their knowledge needs and their preferred methods for acquiring nutrition and diet education. Many of the participants repeatedly spoke about the messages about their health and diet they had received and the applicability of those messages to their lives. The participants’ experiences and their expressed desire for customization of health messages are complementary to the findings of Goody and Drago (2009) and Sherman, Uskul, & Updegraff (2011).

### **Limitations**

There were several limitations that may have impacted the overall validity of this study. A primary limitation was the relatively small number of participants ( $n=16$ ) in the focus group meetings. In addition, there were no participants under the age of 35 and the majority of

participants were over age 50. It is possible that a more heterogeneous mix of ages would have added greater depth to the discussions of cultural exposure and generational influences.

Furthermore, there is the possibility of multiple biases. Selection bias may exist, as all of the study participants were volunteers and may have been more attuned to their health and conscious of the need to improve their diet. The researcher recognizes that the self-selected participants may have been substantially different in experience and attitude towards nutrition than other Asian individuals living with chronic disease in the Anchorage area that did not participate in this project.

Gender bias may exist. All but one of the participants was female, even though the study was open to females and males. The predominance of female participants had the effect of limiting this project's data and themes primarily to the female experience. The solitary male may have curbed his contribution to the discussion due to lack of support for his point of view, although he did not appear to be inhibited during the focus group meeting.

In total, the participants came from three locations; two churches and a multi-service clinic and home care business were the source of all focus group members. It is possible that a greater variation in attitudes and opinions would have been seen in groups drawn from more dissimilar environments. Additional themes may have emerged from discussion among a more diverse group of individuals.

The focus groups were comprised of individuals from only two Asian countries, Korea and the Philippines. This lack of variation in country of origin may have limited the findings. It is possible that participation by individuals from a broader selection of Asian nationalities would have added richness to the discussions and generated more and different findings about culturally driven dietary practices.

The opinions of the focus group members may have been affected or altered by the interaction with other participants. Although no participant gave the outward appearance of being intimidated or overwhelmed, the most outspoken individuals may have dominated the discussion enough to inhibit contributions from the less vocal participants. Individuals may have been influenced to change their true opinions to obtain approval or become more like the rest of the group. Participants may have been reluctant to disagree with the majority and reiterated only the consensus opinions. Participants from the three groups were also familiar with each other, possibly affecting willingness to speak about personal experiences and true opinions.

Lastly, there were limitations associated with the researcher during the study. There was no observer present at any focus group meeting to evaluate the researcher's interaction with the focus group participants and therefore no means of verifying neutrality. The researcher had limited experience leading focus groups and interpreting participants' verbal and non-verbal interactions. General information provided by prior group participants in response to each focus group question was provided to subsequent groups to help verify the trustworthiness of findings. However, the participants were not able to review the researcher's conclusions in order to assure the accuracy of the researcher's findings.

By observing the elements needed to obtain credibility, transferability, dependability, and confirmability, trustworthiness in the findings of this study was optimized. While study limitations were present, the recognition of limitations presents an opportunity for future research. The PEN-3 model supplied the framework for interpretation of study findings. Question responses and statements made during focus group meetings, when analyzed using the model's three dimensions, demonstrated participants had a surprisingly sophisticated understanding of healthy eating habits and how good nutrition could be used to guide self-care of



chronic illness, along with an appreciation of sources of support for managing diet and disease. The model also revealed opportunities for the healthcare provider to recognize and acknowledge culturally important factors in nutritional habits, address patient behaviors that should be encouraged or discouraged, and offer education and intervention when knowledge deficits or need for support are identified.

### Nursing Implications and Recommendations

This research study generated recommendations based on the nutrition-related practices and concerns expressed by Asians with chronic disease living in the Anchorage area. Healthcare providers can apply these recommendations to improve health outcomes for their Asian patients. When putting the recommendations into practice, the provider should consider five elements that are drawn from the study themes. These elements include knowledge, awareness, dynamics, education, and message.

Healthcare providers are qualified to assess for nutrition knowledge deficits and are prepared to intervene with relevant education and recommendations for patients with chronic disease. The content of the obstacle course and checking in/checking out themes in this study showed that the evaluation of a patient's nutrition knowledge level and determination of the sources a patient uses to obtain their nutrition knowledge should be primary goals of the healthcare providers' initial and ongoing assessment. Healthcare providers can supplement any gaps in the nutritional knowledge level of their Asian patients and supply specific nutrition education.

The focus group participants demonstrated a clear awareness of their culturally driven eating habits and the associated health outcomes. Group participants felt that Asians would find it difficult to manage the intake of two food items that are staples in their diet, rice and salt.

**Commented [BB14]:** Was there another limitation in that there was no critique of the researcher's responses and interaction with any of the focus groups? It is very useful for an observer to be present during the focus group sessions to provide feedback to the researcher in order to assure that the researcher is maintaining a neutral stance and not coaching the groups for answers. It would also be important to discuss the researcher's experience with working with focus groups in order to better evaluate the credibility of the responses

Healthcare providers can capitalize on this knowledge by questioning patients directly about the quantity of rice and salt in their diet, asking how difficult patients would find it to eliminate or cut back on intake, and presenting reasonable alternatives to current usage. Participants were cognizant of the negative implications of greater than recommended consumption of rice and salt for hypertension and diabetes but were not familiar with acceptable alternatives. The average American consumes 3,400 mg of sodium per day while Asians consume more than 4,600 mg of sodium per day (USDA and HHS, 2010). This amount is substantially more than the CDCP (2015e) recommendation of 2,300 mg per day for the general population or 1,500 mg per day for individuals with diabetes, hypertension, or chronic kidney disease. Healthcare providers should focus on alternatives to salt for seasoning food, such as Diamond Crystal Salt Sense, a real salt product with 33% less sodium, when working with Asian patients (Cargill Inc., 2015).

Group participants indicated that Asians have traditionally depended upon salt for food preservation and seasoning. Participants continued to use salt for this purpose as part of addressing cost, options and freshness concerns in the Anchorage market. Providers can choose from a number of reputable websites, such as the National Center for Home Food Preservation maintained by the University of Georgia or the website of the U.S. Department of Agriculture Extension Service, when educating their patients about low-salt alternatives for preserving foods.

Focus group participants emphasized the importance rice had in their diet, and overall, the group participants showed little inclination to eliminate rice from their diet. Participants indicated that rice was a component of most meals. Healthcare providers can use their knowledge of this fact and ask specifically about how much rice is consumed as part of the daily dietary intake. While there are no genuine alternatives to rice, providers can recommend brown rice as a substitute for white rice. Research has shown that the risk of developing diabetes is

much greater for Asians who eat white rice (Hu, Pan, Malik, & Qi, 2013). Studies have demonstrated that brown rice has more nutrients and less effect on insulin levels than white rice (Hu, Pan, Malik, & Qi, 2013). Long grain white rice, when compared to short grain white rice, also has less effect on insulin levels (ADA, 2013). Limiting the amount of rice incorporated into the diet is another alternative if rice cannot be eliminated entirely.

Providers can show awareness of patient-perceived barriers to making healthy choices. The content of the breaking the barrier theme shows how patients are challenged to overcome impediments they feel are present. Using the brief intervention approach, the provider can ask about perceived difficulties. Brief interventions using the 5 As model, assess, advise, agree, assist, arrange, can be effective for changing dietary and weight maintenance habits (Almeida, Shetterly, Smith-Ray, & Estabrooks, 2010; Pollak et al, 2010). The provider can assess if patients are ready to recognize and acknowledge that managing their disease is a priority in the competition for time and resources. With provider assistance, patients can become aware that healthy eating can be achieved without sacrificing taste. Providers can advise patients with suggestions for appealing substitutions for high fat or calorie foods, supply recommendations for websites with healthy alternatives to standard recipes, and offer guidance on chain restaurants that offer healthy options by offering a pre-printed handout for patients to reference. This handout can become both a form of referral and a motivational tool, where the patient has been given the resources to manage their choices.

Providers need to be aware of community-level concerns such as cost, freshness, options, and access. Comments on these topics contributed to the breaking the barrier theme. Healthcare providers are members of the community and as residents, are aware of and able to appreciate patients' concern about the cost of healthy foods and access to quality produce. Group

participants spoke at length about both issues. Participants also expressed concern about the rapid loss of freshness and the waste involved when foods spoil so quickly due to the transit time. One participant made a trenchant comment about the affordability of fast and convenience foods when compared to fresh produce that was echoed by several others. Healthcare providers who are aware of the nutrition content and cost of frozen and canned fruits and vegetables can be better prepared to educate their patients about the utility of these products as healthy alternatives to fresh produce. Providers can also suggest that subscription models for produce (such as Full Circle, which runs year-round) can be an alternative to limited grocery chain options.

Providers are aware that patients with chronic disease are challenged to manage their illness, but the focus group participants repeatedly stated that adapting a diet to accommodate a chronic disease was a source of tremendous stress. Participants were clear that the experience of stress was shared with family members, friends, and coworkers and impacted lives on multiple levels, including emotional, physical, and social. Providers can help patients reduce this stress through explicit guidance. A list of precisely what can be included in a healthy diet and how much can be consumed could remove uncertainty as a cause of stress. A similar handout of trustworthy websites presenting the most current recommendations can be offered to those who find stress relief through managing control of their health; for example, the CDCP (2015c) offers extensive information to patients managing diabetes. The list and website referral can demonstrate provider support as well as increase patient confidence and self-efficacy.

Participants expressed the belief that stress could also be beneficial when it encouraged healthier choices through peer pressure. The provider who is aware of the positive aspect of stress can take advantage of this by including family members in their discussions about diet and

managing the patient's chronic illness. Family members can act as a source of support and reinforcement to maintain healthy eating and lifestyle habits.

Healthcare providers also need to consider the family and social dynamics that impact the Asian patient's life. Group participants spoke about these dynamics in the obstacle course, displacement, and checking in/checking out themes. The family is paramount in Asian cultures. Focus group participants lived with multiple generations in a single household. Providers could consider opening appointments and education sessions to include the extended family members, which would help encourage greater adherence to healthy dietary recommendations. Participants indicated that the individual in the household who shops and cooks should be invited to patient appointments where nutrition would be discussed. Participants considered this as (or more) important as having the patient present, especially for households with elderly members and younger adults who rely on another to purchase and prepare most meals.

Participants also indicated that dietary choices are heavily influenced by the dynamics of minority group exposure to the majority culture. Dynamics is alternately defined as passage, progress, change, direction, or tendency; these are all words that are relevant to the consequences of immigrant assimilation and cultural exposure. Providers should ask Asian immigrant patients about their traditional diet in their place of birth and length of U.S. residency. The duration of exposure to a Western diet is a significant factor in the development and progression of chronic disease with Asian patients. Providers should keep in mind that Asians who grew up consuming a traditional diet, those with a shorter U.S residency duration, and those who eat a prudent diet are at lower risk to develop chronic disease.

Healthcare providers are uniquely placed to recognize and address nutrition education opportunities at the individual, family, and neighborhood levels. Education related discussion in

**Commented [BB15]:** In spite of the fact that they generally have a high consumption of white rice and salt?

the focus groups generated data for the breaking the barrier, displacement, and checking in/checking out themes. Participants identified the sources used for nutrition education including Internet, television, and friends and family. As part of an education process, the provider should ask about which sources patients use to obtain their nutrition information. In addition to face-to-face teaching, providers can supply a take-home list of recommendations for reputable sources of information that are culture-specific (see Appendix I).

Providers should consider the request made by the group participants for education that accommodates their learning style, cultural concerns, and health issues. Participants suggested that written information would be more useful than verbal since it could be referred to at a later time. Participants also requested information in their primary language. Alaskan Asians include those of Chinese, Japanese, Korean, Vietnamese, Hmong, Laotian, Asian Indian, and Filipino ancestry (Sandberg et al., 2014). There are a number of websites that offer written patient information on chronic diseases, disease-specific diet plans, and general nutrition in languages suitable for all of these groups (see Appendix I).

Filipinos are the largest Asian group in Alaska, accounting for 50% of all Alaskan Asians (Sandberg et al., 2014). One quarter of the focus group participants in this study were born in the Philippines. One participant suggested that Filipinos found demonstration to be the preferable method of instruction, rather than verbal or written education, and other group members supported this recommendation. There are a number of Internet sites offering videotaped demonstration of healthy meal preparation in Filipino that providers could use as a referral for this patient population.

Focus group participants identified multiple examples of those they believed to be particularly primed for nutrition education. These were individuals the group members saw as

being more open to changing their food choices and improving their eating habits and, therefore, opportunities for education. If the healthcare provider recognizes these ‘primed’ individuals as part of the Asian patient’s family or household, they are candidates for nutrition education. Equipping the patient’s family and household with education through active teaching or written material can reinforce the education imparted to the patient.

Participants also recognized that some individuals were unlikely to appreciate or benefit from education. The group participants mainly included elderly adults in this category, due to their shortened time for appreciation of the potential benefits of healthy eating and lifestyle habits. The group members did add the caveat that although they felt elderly individuals were unlikely candidates for teaching, they did feel that including an elder’s family members in any nutrition teaching could make a difference by providing patient encouragement and support or simply by having the family prepare healthier meals for the elder’s consumption. The Stages of Change Model can help the provider distinguish these patients and intervene at an appropriate level. Using Prochaska’s Stages of Change Model, the provider can recognize the Asian patient’s readiness to accept and implement diet education and customize the approach.

Healthcare providers routinely work with patients and their families but should also be prepared to interact with community partners. In their role as leaders, providers can help to create community-level programs for nutrition education. Providers can also educate and motivate community residents to lobby for changes in nutrition-related policies and improved access to healthy foods. A 2014 study by the International Food Information Council Foundation (IFICF) found that healthcare professionals were the most trusted source of information about proper nutrition and eating habits. Providers can use that confidence to achieve community level goals.

Healthcare providers should consider the message they give to their Asian patients. Data from the displacement and checking in/checking out themes provides evidence that many Asian patients are not receiving a message they find sensible or useful. Group participants provided numerous examples of directions they had received from a healthcare provider that were not practical and could or would not be followed, such as the recommendation to “drink milk”. Participants also spoke about the need for different messages depending on the individual’s age, gender, and length of residence. Providers who tailor their message for the intended audience may find that the recipients are disposed to put into practice what is communicated.

Healthcare providers can address ethnic heritage, cultural identity, and health conditions in their message when making recommendations for improving or maintaining healthy eating habits. Nurses are particularly prepared to meet the needs of culturally diverse populations; cultural competence is part of the basic nursing curriculum. The focus group participants provided numerous illustrations of education they had received from a healthcare provider that they felt were unworkable. For example, some participants were simply told “drink milk,” although lactose intolerance is a problem for greater than 90% of Asians (NCMHD Center of Excellence for Nutritional Genomics, 2012). Participants stated their willingness and openness to learning but need to be given a message that is well considered and culturally appropriate.

Healthcare providers can be prepared to pass on an effective message regarding the applicability of health concerns to Asian patients through cultural awareness. To motivate people to change their health beliefs and behaviors, the person requires an understanding of what the issues are and a belief that the issues affect them personally (European Food Information Council, 2010). Customizing a message to be culturally appropriate and personalized can impart this motivation.



In this study, participants were knowledgeable about the elements of healthy eating and how healthy eating could affect their health and the outcome of their chronic disease. Participants were also conscious of the impact their family and community had on their choice of foods and eating habits. Participants were aware of the relationship between Asian heritage, culturally maintained food preferences, and the disease patterns seen in Asians. Healthcare providers can help Asian patients make and maintain dietary changes to improve health through culturally appropriate interventions.

### **Recommendations for Future Research**

Recommendations for further research studies include repeating the focus group discussions with a larger sample for comparison with this study. Future studies should consider recruiting a more heterogeneous age mix and pursuing participation by a balanced number of each gender. Researchers evaluating participant criteria in the future should also consider repeating the study with males only, as this study was almost exclusively female.

Furthermore, in any subsequent study, researchers should attempt to solicit participants from more diverse environments as well as more participants that are unknown to each other. Active measures to recruit participants of Asian nationality other than Korean or Filipino should also be undertaken. The above measures could increase the number of, and variation in, responses and themes generated by the responses. While a study using voluntary participants will risk selection bias, researchers in future studies can take this into consideration when interpreting results. The same attention to interpretation can be given when group meetings present the possibility of opinions being affected by participant interaction.

Iwelunmor et al. (2013) make the recommendation that studies utilizing the PEN-3 model use qualitative methods at the outset in recognition of the distinct individuality of each culture

and then proceed to the development and evaluation of quantitative measurements that are more useful for generating generalizable data. Further studies could be used to develop a nutrition questionnaire that can be administered quickly and easily to Asian patients. The questionnaire could be used to determine individual patient goals for nutrition education and to evaluate the education practices of the healthcare provider.

#### **Dissemination Plan**

A poster presentation of the project and findings was given at the Alaska Nurse Practitioner Association Conference in September 2015.

#### **Conclusion**

Awareness of a patient's cultural and customary nutritional patterns can allow healthcare providers to recognize how the patient perceives barriers to making beneficial dietary changes (Hawthorne, Robles, Cannings-John, & Edwards, 2012; Shaw, Huebner, Armin, Orzech, & Vivian, 2009). Gabaccia states, "Food and language are the cultural habits humans learn first and the ones they change with the greatest reluctance" (as cited in Goody & Drago, 2009, p. 44). Knowledge of the culture and customs that direct the Asian patient's decisions aids the healthcare provider to work cooperatively with the patient to achieve better health outcomes. An awareness of the factors that influence how the patient manages the nutritional component of their condition prepares a provider to create an eating plan that is more likely to be accepted and followed long-term. The provider can then provide education tailored to the individual to support a patient's self-care effort.

This research project was designed to capture opinions and develop recommendations that could be used to form a greater understanding for culture-specific nutrition education and intervention. It is apparent from the responses given by the study participants that there is a need

for culture-specific nutrition education. The participants expressed an interest in learning about nutrition to manage their chronic illness and prevent the detrimental effects. The participants also stated that nutrition education for general health and specific to chronic disease was expected as part of their regular healthcare visits.

According to Iwelunmor et al. (2013), there is an opportunity for the healthcare provider to intervene at the level of the person, family, and community. The landmark WHO (2003) study on the role of nutrition in chronic disease indicates that the individual is more likely to make and maintain positive changes in their diet if their environment, encompassed by their family, friends, and community, is favorable. Addressing barriers can frequently be done in a clinic setting at the individual and family level. Healthcare providers with an awareness of the perceived barriers of a cultural group can also work at the community level to improve outcomes. Healthcare providers can exercise their leadership role and present research that demonstrates the need for understanding and proposes solutions to identified problems to the network of healthcare practitioners following evidence based care.

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## **Appendix A**

### **Dr. James' Focus Group Questions**

#### **Concepts of Healthy Eating**

1. What comes to mind when you think of eating healthy? (Probe: What makes a food healthy or unhealthy?)
2. What comes to mind when you hear the words 'eating habits of blacks/African Americans?'  
(Probe: Do most blacks/African Americans eat a healthy or unhealthy diet? Are they interested in eating a healthier diet?)

#### **Barriers and Motivators to Healthy Eating**

3. What factors in your life make it difficult for you to eat a healthy diet? (Probe: What about when you eat out?)
4. Which foods are the most difficult to limit or give up from your diet? (Probe: Do these foods have any special meanings to you?)
5. Which foods do you think would be the most difficult for most blacks/African Americans to limit or give up? (Probe: Do these foods have any special meanings?)
6. Which foods or food groups would be the most difficult to add to your diet? (Probe: Why?)
7. What are the main reasons that prevent many blacks/African Americans from eating healthier foods?
8. What would motivate you to improve your eating habits? (Probe: Why?)
9. What factors would motivate most blacks/African Americans to change their eating habits?  
(Probe: Why?)

#### **Nutrition Education Channels**



10. Where do you get most of your nutrition information? (Probe: What type of information do you usually get? How do you use the information?)
11. What groups in the African American community would be receptive to changing their eating habits? (Probe: Why? Where should we start?)
12. What type of information do you need to help change your eating habits?
13. Where do you think other blacks/African Americans get their nutrition information?  
( Probe: What would be the best way to educate African Americans about health issues?)

## Appendix B

### Permission Email from Dr. James

**James, Delores Corinne Suzette**

To: alison armour

Re: Your culturally sensitive model study

---

Hi Allison,

You have permission to use the focus group guide. I would request that you put me in the acknowledgement.

If you do not have enough for each group, I recommend that you use triads (3 per group) rather than larger focus groups.

Hope this helps.

Dr James

Sent from my iPad

## **Appendix C**

### **Project Focus Group Questions**

#### **Concepts of Healthy Eating**

1. What comes to mind when you think of eating healthy?
  - Prompt: What makes a food healthy or unhealthy?
  - Prompt: Do most Asians eat a healthy or unhealthy diet?
  - Prompt: Are they interested in eating a healthier diet?

#### **Barriers and Motivators to Healthy Eating**

2. What factors in your life make it difficult for you to eat a healthy diet?
  - Prompt: What about when you eat out?
  - Prompt: What about other Asians?
3. Which foods are the most difficult to limit or give up from your diet?
  - Prompt: Do these foods have any special meanings to you?
  - Prompt: Which foods do you think would be the most difficult for most Asians to limit or give up?
4. Which foods do you think would be the most difficult to add to your diet?
  - Prompt: What makes them difficult to include?

#### **5. Nutrition Education Channels**

5. Where do you get most of your nutrition information?
6. What type of information would help you make better choices about what you eat?



## Appendix E

### IRB Approval



Research &  
Graduate Studies

3211 Providence Drive  
Anchorage, Alaska 99508-4614  
T 907.786.1099, F 907.786.1791  
[www.uaa.alaska.edu/research/ric](http://www.uaa.alaska.edu/research/ric)

DATE: June 24, 2015

TO: Alison Armour  
FROM: University of Alaska Anchorage IRB

PROJECT TITLE: [753753-4] The effect of cultural beliefs and customs on nutritional attitudes and food choices of Asian populations living with chronic diseases in the Anchorage metropolitan area.

SUBMISSION TYPE: Amendment/Modification

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: June 24, 2015

Your Institutional Review Board (IRB) proposal meets the U.S. Department of Health and Human Services requirements for the protection of human research subjects (45 CFR 46 as amended/revised) as being exempt from full Board review. In keeping with the usual policies and procedures of the IRB, your research project is approved with suggested revisions. Thank you for a copy of these revisions.

Therefore, you have permission to begin data collection for your study. If this study goes beyond one year from the date of this submission, you will need to submit a Progress Report for approval to continue the research and please submit a Final Report at the end of your project.

Please report promptly proposed changes in the research protocol for IRB review and approval.

On behalf of the Board, I wish to extend my best wishes for success in accomplishing the objectives of your study.

A handwritten signature in dark ink, appearing to read 'Sharilyn Mumaw'.

Sharilyn Mumaw, M.P.A.

Research Integrity & Compliance Officer

## **Appendix F**

### **Focus Group Script**

Hello. My name is [-----], from the University of Alaska Anchorage Family Nurse Practitioner program. Accompanying me today is [-----], a fellow student. We are here today to conduct a focus group with Asian individuals with chronic disease to understand how culture affects diet and nutrition choices.

A focus group is a guided discussion in which all participants are encouraged to respond to a series of broadly worded questions on a particular topic. We are very interested in hearing about what everyone in the group thinks and there are no wrong comments or responses. My role as moderator is to keep the discussion on focus and to make sure that nothing is misunderstood. It is not to participate in the discussion.

The purpose of today's focus group is to help determine what kinds of issues you, and other members of your community with chronic disease, face regarding the choices you make about your diet and nutrition. We have invited you here today because of your experience with chronic disease. We value your opinions and encourage your honest and complete feedback in response to our questions, and we are thankful that you've agreed to come to this group to share your thoughts and perspectives. While we encourage your full participation to help us understand how you make your decisions about your diet, there are no negative consequences for choosing not to respond to any questions during the course of this group.

We want to remind you that what you tell us today will be combined based on the themes and topics we identified. No names or identifying information will be associated with anyone's particular responses or appear on any presentation or report. With your consent, we will be using a recording device to ensure that we preserve a complete and accurate record of what is shared in

this group. Today's recording and any notes will be kept secure and only the two student researchers will have access to them. There is a time limit on how long these are kept and then they will be destroyed. Are there any questions? [Moderator answers any questions].

You received the Informed Consent form when you arrived. Everything I have just described is written on this Informed Consent form. We invite you to ask any questions you have regarding the Informed Consent process at this time. [Moderator answers any questions]. If there are no other questions, we ask that you sign the form to express your written consent to participate in this focus group and place it in this manila envelope. I will sign this form as well. You will receive a copy of this statement for your records, which contains within it the contact information for the persons responsible for this project, should any questions arise after we leave here today. [Moderator collects consent forms].

To get us started, we'd like to have you briefly speak about yourself and tell us why you decided to participate. Please do not use any names for yourself or anyone else and use the fruit on the card in front of you instead. I will begin.

[Moderator will once again give her name. After the moderator has completed her introduction, she will gesture to the person to her immediate left who will then be asked to introduce her or himself. When introductions have been completed, the note taker will turn on the recorder and the moderator will begin the focus group.]

[Focus group questions will be asked. Prompts will be used to help participants clarify their responses, to encourage further depth, and to ensure that participants touch on all of the salient points addressed by the question.]

This concludes our questions. We are very thankful for your time and your thoughtful responses. We ask that you observe and respect the confidentiality of all participants.

## Appendix G

### Permission Email from J. Kaufmann

Jo Ann Kauffman

To: alison armour  
Focus Group Script

---

Dear Alison,

Certainly, you have my permission to use or modify our focus group script for moderators. I am glad you found it helpful.

Jo Ann Kauffman, President  
Kauffman & Associates, Inc.  
W: 509-747-4994 C: 509-768-8557  
[www.kauffmaninc.com](http://www.kauffmaninc.com) •  
[Joann.kauffman@kauffmaninc.com](mailto:Joann.kauffman@kauffmaninc.com)

"We Do Work That Matters"

GSA Contract Holder



## Appendix H

### Consent

#### Consent Form

**Researcher:**

Alison Armour, UAA School of Nursing  
(907) 727-7006

**Faculty Advisor:**

Dr. Christine Michel, PhD  
(907) 786-4590

School of Nursing, University of Alaska Anchorage

**Description:**

I am asking you to be part of a focus group talking about how culture affects diet. If you agree to take part, you will be a member of a group that will include several adults from the Anchorage area. The meeting should last approximately one hour.

**Voluntary Nature of Participation:**

Your participation in this study is voluntary. You may stop at any time and you do not have to answer any questions you do not want to. Nothing will happen to you if you choose not to answer any questions or if you decide not to participate.

**Confidentiality:**

I would like to record the focus group. This will help to keep the researcher's notes accurate. Recordings and paperwork will be kept in a locked file cabinet. Only the researcher will have access to them. It will not be possible to identify you from any of the data. Your name or any other information that can identify you will not be attached to any of your responses, or to any reports or posters describing the results of this study.

**Potential Benefits and Risks:**

Being part of this study will take about one hour of your time. If you decide to take part, your willingness to share your experiences and knowledge may help healthcare providers in the future. Healthcare providers teach good eating habits to adults. Information from this study could make the teaching more specific for people in your culture. There are no anticipated risks or benefits to you from taking part in this study.

**Compensation:**

To thank you for being part of the study, you are offered a \$20 gift certificate to Wal-Mart. To receive this, you must remain for the full group meeting. The certificates will be distributed at the conclusion.

**Contact People**

Please call Alison Armour, Family Nurse Practitioner student, at 727-7006 with questions about this study. You may also contact Dr. Christine Michel, faculty advisor for this project, at 786-4590. Please contact Sharilyn Mumaw, Research Integrity & Compliance Officer, at (907) 786-1099 if you would like to know more about your rights as a person in the study.

**Signature**

Your signature below means that you have read the information above and agree to take part in this study. If you have any questions, please feel free to ask them now or at any time during the study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Print Name \_\_\_\_\_

**A copy of this consent form is attached for you to keep**

## **Appendix I**

### **Demographics**

#### **Demographic Data Form**

**Researcher:**

Alison Armour, UAA School of Nursing  
(907) 727-7006

**Faculty Advisor:**

Dr. Christine Michel, PhD  
(907) 786-4590

School of Nursing, University of Alaska Anchorage

1. My age is:

- ☐ 18 – 34
- ☐ 35 – 55
- ☐ 56 or above

2. I am:

- ☐ Female
- ☐ Male

3. I was born in:

(For example Anchorage, Alaska or London, England)

- ☐ City \_\_\_\_\_
- ☐ State or Country \_\_\_\_\_

4. I have lived in Anchorage:

- ☐ 6 months – 3 years
- ☐ 4 – 9 years
- ☐ 10 - 20 years
- ☐ Over 20 years

## **Appendix J**

### **Resource List**

Partial list of culture-specific education resources:

- Asian Alliance for Health. (2012). Health info. Retrieved from <http://asiansforhealth.org/healthinfo#.Vhne2ryGidA>

(Disease specific and nutrition information available in Chinese (traditional and simplified), Korean, Filipino, Vietnamese, and English.)

- Canadian Diabetes Association. (2015). Food and nutrition tools for South Asian populations. Retrieved from <http://www.diabetes.ca/clinical-practice-education/professional-resources/food-nutrition-tools-for-south-asian-populations>

(Nutrition content of South Asian foods, sample menus, advanced diet and nutrition available in multiple languages.)

- Chinese Community Health Resource Center. (2012). Food and nutrition. Retrieved from <http://www.cchrhealth.org/health/health-education-material/food-and-nutrition>

(Information on DASH diet, guide to healthy eating, principles of diabetic diet, sample diabetic diet, tips for eating out, fats, carbohydrates, cholesterol and many other topics available in simple and traditional Chinese and English.)

- Ethnomed.org

(Medical information on immigrant groups. Patient education on a number of disease topics in several Asian languages. Sponsored by as a joint program of the University of Washington Health Sciences Libraries and Harborview Medical Center's Interpreter Services Department/Community House Calls Program.)

- Harvard T.H. Chan School of Public Health. (2015). The nutrition source. Retrieved from <http://www.hsph.harvard.edu/nutritionsource/>

(General nutrition recommendations, advice, news, and recipes.)

- Harvard T.H. Chan School of Public Health and National University of Singapore Saw Swee Hock School of Public Health. (2015). Asian diabetes prevention initiative. Retrieved from <http://asiandiabetesprevention.org>

(Information on prevention and treatment of diabetes, risk scoring available in food pyramid in Chinese (traditional and simplified), Japanese, Korean, and English.)

- HealthInfoTranslations.org. (2015). Health information translations. Retrieved from <https://www.healthinfotranslations.org>

(Health education resource materials available in Chinese (Simplified, Traditional), Hindi, Japanese, Korean, Nepali, Filipino, Vietnamese. Hosted by Ohio State University in cooperation with the State of Ohio and Ohio hospital groups.)

- Palo Alto Medical Foundation. (2015). South Asian nutrition & healthy eating. Retrieved from <http://www.pamf.org/southasian/nutrition/index.html>

(Information, recipes, links, and videos.)

- Pitchford, P. (2002). Healing with whole foods: Asian traditions and modern nutrition. 3rd ed., Berkeley CA: North Atlantic Books.

(800 page textbook of health, diet, nutrition, and recipes.)

- Tufts University. (2015). Spiral: Selected patient information in Asian languages. Retrieved from <http://spiral.tufts.edu/index.php>

(Disease specific health and diet information in Cambodian, Chinese, Hmong, Japanese, Korean, Laotian, Thai, Vietnamese, and English.)

- U.S. Department of Agriculture. (2013). Cultural and ethnic food and nutrition education materials: A resource list for educators. Retrieved from <http://www.nal.usda.gov/fnic/pubs/ethnic.pdf>

(Current list of culture-specific nutrition education sources.)

- U.S. Department of Health & Human Services. (2015). Healthy eating. Retrieved from <http://catalog.nhlbi.nih.gov/catalog/term/Healthy-Eating>

(Catalog of recipe books, menus, tip sheets, and reports available in multiple languages.)